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ORIGINAL ARTICLES.

ADDRESS OF THE CHAIRMAN OF THE SECTION ON STATE MEDICINE, ETC.

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[Delivered before the American Medical Association, Cleveland, June, 1883.]

MR. PRESIDENT AND MEMBERS OF THE ASSOCIATION:

Your by-laws require of the Chairman of each Section a paper on the "advances and discoveries" of the past year, in the branches of science included in his Section. The somewhat undefined boundaries of the Section of "State Medicine," and the purely practical nature of that part of its scientific domain which is defined, make the task of the Chairman, as declared by the by-law, not a little embarrassing. "Discoveries" which influence and advance State medicine are made and claimed by workers nominally identified with other departments. Physiology, pathology and chemistry, as a rule, make the "discoveries," and the right to report them in all their details and bearings belongs to other Sections. Practical sanitation, the principal aim of "State medicine," makes no "discoveries." It is not permitted to indulge even in the luxury of theories. It uses discoveries when they become established facts, and when they prove to be available for hygienic purposes. I have, therefore, no "discoveries" to report; but of "advances" I have something to say.

Before proceeding to a consideration of these recent advances in sanitary work, permit me to say that psychology, insanity, medical jurisprudence and medical expert evidence have each received, during the year, the attention to which they are severally entitled, but there has been no noteworthy "advance" in either. The cure, or seeming cure, of the insane, in some cases, causing their release from asylum isolation and their return to society, to resume or contract marital relations, and to propagate, by heredity, their unfortunate conditions and tendencies, is beginning to attract attention as a possible—indeed, probable—cause of increasing the percentage of insane to population.

Recent pathological inquiries and researches have suggested the question, What—if anything—may be done by systematic effort to prevent insanity? The question springs, naturally, from present tendencies of medical thought, but, as yet, no answer is given. There has been the usual discussion of the various methods of managing the insane, and with the usual result of continuing, substantially, the established plan. Expert medical evidence occupies an uncomfortable and undignified relation to American law and practice; but there does not seem to be for the present, any hope of relief. When our law of trials will permit courts to determine who are experts and to call them to testify for *science* and relieve them from the appearance of testifying for a *side*, their evidence will command, more thoroughly than now, the respect and the confidence of courts, juries, parties and people.

The Association has named this the "Section of State Medicine." This seems to be both an incomplete and an incorrect designation. State Sanitation would much more correctly define its purpose and its real work. But in view of the dual agencies essential to the performance of its important function and the nature and purpose of the function itself, it would be much more accurate to disignate or define it by the term "Medico-Legal Sanitation." Prevention of disease, and not cure, is its chief purpose; medical knowledge inspires and guides it; law authorizes and sustains it. In the language of Dr. Chaille, of New Orleans, "State medicine is the application, by the State, of medical knowledge, to the common weal." It is in no spirit of hypercriticism that attention is called to this matter. The designation given to this Section and its work creates distrust in some quarters, and requires elaborate explanation in others, not to speak of other difficulties, all, or nearly all of which would be obviated by a name clearly defining its nature. If it were called the "Section of Public Health," many prejudices and difficulties would be avoided, and this, perhaps, would be as good a name as any. But names, titles and designations, whether fortunate or unfortunate, have not prevented the progress of this latest manifestation of medical philanthropy and enlightened statesmanship, and it becomes my grateful office to report to you its "advances" in methods, conditions and prospects.

This Section of State Medicine was established by the Association in 1873. It has now completed its first decennial period; and not exceeding fifteen years have passed since systematic sanitary work, with State aid, was begun in these United States. Meeting from year to year, as we have, to estimate and report progress, our advance has seemed, to our impatience, to be slow; but to-day, as we compare the best State sanitary work of 1883 with its beginning in 1873, we must congratulate ourselves and our country that during these ten years so much has been accomplished.

What has been accomplished? Sanitary organiza-

tions and machinery have been developed, and, to a great degree, perfected. State and local boards of health, with their secretaries, health officers, and other executive agencies, have been educated, in some degree, for their special work. Voluntary sanitary organizations, sanitary conventions, sanitary books, magazines, newspapers, lectures and discussions, indefinitely multiplied by an unprecedented mental activity in this direction, clearly indicate the professional and popular interest in sanitary knowledge and work. Scientific and costly attention is paid, as never before in the history of man, to the hygienic structure, heating, lighting and ventilating of homes, shops, school-houses and other public buildings. Earth, air and water are investigated, and wholesome suspicions ferret out their unwholesome conditions. Marshy, and other deleterious telluric agencies that extensively pollute atmospheric and aqueous conditions are removed or mitigated by ditching, draining, filling and cultivation. Municipalities without number are supplying themselves with water from purer sources by various systems of supply. Their accumulated filth is destroyed, removed or disinfected and the newly accumulating refuse is carried away by systems of sewerage or other effective agencies.

It is scarcely necessary to remark that hygienic measures, of a certain kind, are as old as the history of civilization; but, until lately, they were used only by great cities. The enormous development of these old and of many new sanitary agencies during the last decade, in towns large and small, are the unmistakable exponents of an unprecedented growth of sanitary knowledge, and of a remarkable intellectual activity among the people regarding its use and application.

It is plain that the people are emancipating themselves from their thraldom to the old superstitions that held them paralyzed and helpless in the presence of epidemics and other fatal scourges, general and local, seeing in them only the special manifestations of God's wrathful punishment of sin. They are beginning to learn that the seeds of many diseases, and their propagation and diffusion, are governed by laws, although their existence is a consequence of a violated sanitary law, and that, by observing the sanitary law, they may, in a measure, escape the fatal results. They begin to understand that

> "The curse, causeless, does not come,"

and that it is of prime importance to know and avoid or prevent the true cause. They begin to understand that physical laws may be ignorantly broken without moral guilt, though not without punishment. This gradual emancipation of the people from some of these ancient superstitions, and their paralyzing influence, has been one of the first and most important steps towards inculcating the general belief that much of disease is preventable, and that, so far as it is preventable, it becomes their duty as well as interest to engage in the required measures of prevention.

All this change among the people has had just the effect on our legislatures and law-making powers that was desired, and that is to be anticipated under a form of government like ours. Prior to 1873 but two States in the Union had established State Boards of Health—Massachusetts and California. Since 1873 twenty-five other States have inscribed "Sanitary Reform" on their banners, and now twenty-seven in all, of the thirty-eight States in the Union, practically proclaim that "the safety of the people is the supreme law," that "public health is public wealth," and that to promote "the health of the people is the first duty of statesmen." Eleven States yet neglect or refuse to enlist in this glorious warfare against preventable disease and unnecessary death. Politicians may not favor nor comprehend institutions and movements that furnish neither place nor plunder for their partisans and followers; capital, intrenched behind profitable nuisances and money-making food frauds, may resist the assaults of indignant humanity; prejudice may decry innovations, and urge that we stand by the "ancient ways;" superstition may continue to hold up its hands in holy horror that men should presume to doubt or meddle with the "superintending providence of God;" even scientific evolutionists may scorn our work because it assumes to interfere with their law of "the survival of the fittest;" and ignorance, the rank and file of this army of opposition, may deride and resist, as at first it always does, its saviors and benefactors; and all combined may delay for a while the "consummation devoutly to be wished;" but not long. Success in this grand sanitary movement is certain to come, and not many years will pass before every State of our Union will be engaged in organized effort to battle with the unnecessary ills and evils that torture humanity and enfeeble the State. And when the health boards of thirty-eight States demand a National Board of Health, composed of men who command their confidence, with money and power, to do a quarantine work at the sea-board and on inter-State lines of commerce, that individual States cannot do—then, I ask, when thus challenged, what will the Congress of the United States do? When we ask for bread will it give us a stone?

Resuming our review of the sanitary movements of the decade, the question comes—What primal central impulse has been sufficient, in ten years, to so move upon the popular and the law-making mind of our country as to enlist twenty-seven States in this humane and wholesome movement? After nineteen years of previous agitation by her medical men, Massachusetts, on the Atlantic, in 1869, gave statutory shape to the idea of medico-legal sanitation. California, on the Pacific, followed close after her in 1870. The idea was more fully developed and more fully endorsed in this Body in 1873, by the establishment of this Section, and from here, the leaven of statutory sanitation has been carried by our medical brethren into every city, village and hamlet in the land; and now, three-fourths of our States have created for themselves State and local Boards of Health, all of which, in their respective spheres, move with harmony and more or less of efficiency, to accomplish in concert a humane and a blessed purpose. Missouri, the latest recruit, has been added this year to our ranks; Ohio and Pennsylvania have recently made strenuous

but unavailing efforts to join the majority. We wish you better success next time, brethren; success is sure to come; we expect you, and others with you, to join us very soon. We shall not wait for you in the work, though a warm welcome waits you when you come.

The aid and agency of the American Public Health Association, in producing these flattering results, must be recognized. Its membership, comprising doctors (without regard to denominations), lawyers, architects, builders, engineers, plumbers, and others actively engaged, either officially or by personal interest, in the planning, testing or execution of sanitary methods, has been a most efficient factor among the agencies by which people and legislatures have been brought to understand, appreciate and promote sanitary work.

But first and foremost among all the agencies that have molded public opinion to favor organized hygienic work, stand the individual doctors. Each in his own sphere a power. Together, it has been their work to inspire patrons and neighbors with a willingness to co-operate; but they have led the way, have shown how, and have demonstrated success. And what has been their weapon—what their ways and means? *Facts*. Facts and reason have been their principal weapons. Facts piled on facts have demonstrated that small-pox can be prevented. By its danger to life and features, its loathsomeness, its communicability and its prevalence, small-pox, in the popular mind, stands at the very head of dangerous and dreaded diseases; it stands also—thanks to Jenner's grand discovery—at the very head of the preventable diseases. Isolation of other communicable diseases has been proved, over and again, to be an efficient measure to prevent their diffusion. Many facts in the history of local epidemics have been used to prove the diffusibility and the diffusion of disease by direct and indirect communication; and little does the layman care about our theories of germ-propagation, when he becomes convinced that the disease is "catching."

But facts are used and are useful on a grander scale. Dr. Wm. Farr, the great vital statistician of England, died only a few weeks since. In 1838 he began his long unappreciated and thankless labor in the compilation of vital statistics. During thirty long years he, by persistent labor, accumulated fact on fact, piled table on table and added demonstration to demonstration. His life tables, at last, became the basis and guide of life insurance, and the passage, in 1872 and '73, of the British Public Health Acts, crowned his persevering labors with a grand success. The *British Medical Journal* of April 21 of this year says: "It was Dr. Wm. Farr who created our system of vital statistics, through which the public was taught the necessity for sanitary reforms, especially in our large towns. It was, moreover, the public faith in Dr. Farr as a vital statistician, that gave weight to the mortality statistics issued by the Registrar-General, thus making possible the passing of the Public Health Acts of 1872 and 1875, from which dates the marked decline in the English death-rate recorded during the past seven years." Again it says: "It is not too much to say that the figures collected by him, the principles which he deduced from them, and the accomplished skill with which he impressed the doctrine of sanitary law upon statesmen and on the public mind, have done more to forward the progress of sanitation throughout the world than the labors of any other man, perhaps, who could be named."

Yes, Mr. President and gentlemen, Dr. Farr's tables, Dr. Farr's deductions and demonstrations were the basis on which, we, in the United States, laid the foundations of our sanitary structure. It was mainly from his arsenal of facts and established principles that we drew the weapons of argument with which we won our first victories for sanitary organization and reform. Our own workers, inspired by his example and guided by his experience, were soon busy in the same field of vital statistics, confirming Dr. Farr's results, or demonstrating wherein and why our differing conditions gave different results.

And so we have won our way; the vital facts having been clearly established, on both sides the Atlantic, we have successfully enlisted people and lawmakers in the cause of public health. And now, the fact that during the last decade, we have succeeded, in our efforts for sanitary reform, far beyond our expectations at the beginning, should assure us that the average mind is, after all, fairly responsive to the Baconian system of inductive philosophy. The *facts* being established, the practical deductions therefrom are readily drawn. Our public and private Davy Crokétts in effect say to us, "Be sure you are right and then go ahead." But we must first win them to our cause wholly or mainly by facts, or we (even our best men) will be thrust aside as visionary theorists or perhaps as "salary grabbers." (See congressional debates.)

But we shall be asked to state, more definitely, what is or may be done by State Boards of Health, and their auxiliary agencies which justifies their organization and their cost. Partly, if you please, from a natural State pride, but mainly because I know more of its operations than of any other, I will answer this question by briefly recapitulating the annual sanitary work of my own State of Michigan.

The Michigan State Board of Health consists of seven persons nominated by the Governor and confirmed by the Senate. At last report one was a lawyer, one a clergyman and five were physicians, representing two or more schools of practice. Sixteen classifications of nearly forty questions and topics permanently important to our sanitary work, are assigned to sixteen standing committees made up from the members of the Board. Auxiliary to this central Board are nearly 1,400 *local Boards*—there being one created by law, in every city, village and township in the State. To these *local* Boards, is committed every function they can fulfill, each in its own locality, and to the State Board only such work as local Boards cannot do. Permanent correspondents of the State Board are appointed in nearly every important locality in the State. At least, two Sanitary Conventions continuing two full days, are held each year under the general direction of the State

Board in some one of the larger towns of the State, and always on invitation of its citizens, and they are so located from time to time, as to reach various localities and awaken interest in the work, wherever held, among the people of the locality—all being invited to attend. The work of these Conventions consists in the reading of papers by men and women previously selected or volunteering, upon some important general or local sanitary question, couched, in the main, in language all can understand, and, in extemporaneous discussions of the questions raised. A list of the subjects thus presented at one such Convention, recently held, will not be without interest: "What the law can do for the health of the people" by Justice Cooley of our Supreme Bench; "Hygiene of the eye" by an oculist; "Ventilation of basements"—including "Filth and Disease Germs" by a doctor; "The care of health a Christian duty" by a clergyman; "How to combat small-pox" by a health officer; "Ambulance Hospital for small-pox in small towns" by a medical member of the State Board; "Purification of water by freezing" by a doctor; "School life and hygiene" by a doctor; "Hygiene and the clerical profession" by a clergyman; "Analysis of samples of milk and of water" by a chemist; "How to utilize the Press for Sanitary purposes" by an editor. This incomplete catalogue sufficiently states the questions, all of which were simple but ably treated. Nearly all were published in the local papers and widely circulated, by copying or otherwise, all over the State. The State Board itself holds regular meetings, at which its standing committees present useful and instructing reports on assigned questions.

Forty correspondents, in various sections of the State, report statedly the daily meteorological conditions of their respective localities. Reports paid for and required of physicians, of each case of disease dangerous to public health, are made to local boards as a basis of local action. Weekly or monthly reports from local health officers, during dangerous epidemics, to the Secretary of the State Board, and annual reports from the fourteen hundred local boards of health of the number of cases and deaths from communicable diseases. Births, deaths, and marriages are reported by assessing officers and local clerks to the Secretary of State. This work is far from being perfectly done, but year by year the quality of the work is growing better. But all these reports, convention proceedings, and papers are published in an annual volume, and widely distributed. With this annual volume and the quality of its contents all active sanitarians, at home and abroad, are familiar. Having a full knowledge of the work of our accomplished vital statistician and Health Secretary, Dr. H. B. Baker, I wish to say that it is not excelled in America. All officially connected with sanitary work will fully endorse this encomium. And good as is his work as the executive officer of the Board, valuable as are all his published tables of vital statistics and annual reports, I wish to reveal, what may be to many a secret,—good, I say, as is his published work, he is doing, as a vital statistician, better work and broader work than appears. In due time it will speak for itself.

Now, the cost of all this and more to our State treasury has been less, during the past year, than $6,000—this being the gross sum annually appropriated for these purposes. Do you think it pays? I am sure of your answer. But this is a work that educates, not doctors but the people, and the significant, the potential answer must come from the people, largely from intelligent laymen who know the value of life and health to the individual, to the family, and to the State. Let the intelligent men of Ohio and Pennsylvania, and other States not yet enlisted in this latest and best work of the nineteenth century—the men who, directly or indirectly, rule the counsels of their States—let them answer. Let such men consider whether the wide diffusion of sanitary knowledge, such as I have described in my own State, the supervision and suppression of endemic and epidemic diseases, and the curtailment thereby of sickness, suffering, and death, is worth $6,000 a year. And now let me say further; this seeming vaunting of the health work of my own State has been indulged in for a special purpose and in accordance with special requests from various States having no boards, to describe here, and to have it go abroad with the sanction of this great body of medical men, what is done in some States, and what may be done and ought to be done in every State, and how cheaply it can be done. With these facts, and many others not possible to give here, to guide the opinion, it must be left to every intelligent citizen to decide for himself or herself whether all this is worth the money. I said "himself or herself"—it is a fact that the first successful movement made in Massachusetts, and in the United States, in the direction of State sanitation, was instigated by a lady, whose husband was a political leader in the legislature of that State. Women who live at home with their little children, amid unsanitary surroundings, have a great stake in this sanitary movement—aye, and they have great influence to originate and guide it as well, if they will but intelligently use it.

But the cynical and persistently incredulous will ask, perhaps, "How many lives, per annum, do you save?" To this, as yet, we can only answer, "We do not know," and "we never will be able to answer such a question." Our own vital statistics have not yet been carried far enough, nor have they been made thorough enough, to furnish a reliable standard of comparison between distant periods, or to become full answers to such questions. But this we do know—that whereas, by Dr. Farr's tables, the average duration of human life in England thirty years ago was for males 39.9 years, it is now, after only seven years of organized and efficient sanitary work, 41.9 years—an addition of two full years to the average duration of male life in all England. The effect on the average of female life is still more striking. Women, as a rule, suffer more than males from the unsanitary surroundings of their homes, and the improved hygiene of cities and towns of England, for the past seven years is now shown to have added to the average duration of female life nearly three years and a half. This is an addition, by a few years of intelligent work, of five per cent. to male

life, and more than eight per cent. to female life; or an average addition of six and one-half per cent. to the aggregate life rate of England. It is but two or three months since these gratifying results were announced, and life insurance interests are already speculating on the effect they will have on the rates of insurance and of annuities. Is not this sufficient proof that State sanitation, intelligently organized and discreetly managed, is a good investment? This pecuniary consideration, it is true, is on the lowest plane, but the considerations that lie in the higher planes need no arguments.

I shall carefully refrain from basing rose-colored estimates of results on the meager outline of sanitary work done and now described. It is true I have taken (for various reasons given) my own State as a type of what may be done by any State in this direction. I have given from English what cannot yet be given from home statistics—the results to average life-time of seven years' intelligent attention to public health. The conditions, social and economical, that surround these questions, in the Old World and the New, are quite different, and we may expect differences in final results when reached; but who here can doubt that the result in England will be eventually duplicated in America? But our public health work is very imperfect. It is yet in its infancy. Much remains to be done to perfect the work, even of the foremost State. Nevertheless, many States are doing good work, and in different ways and directions. The work cannot be alike in all States, because each has its peculiarities of soil, climate, occupations and populations. While Illinois, West Virginia and New Jersey are doing good work by regulating the practice of medicine and the sale of adulterated foods and drugs, other boards, in the yellow fever region, are noted for some other specialty of work, and all are doing good; but none of them as much good as they may and will do when fully sustained by their respective legislatures. Let us hope the time will soon come when it will be the first care of States to cure their unsanitary conditions, and the first care of newly-organized Territories, organized on virgin soil, to prevent evils for which older States seek costly cures.

But thus the work goes on, rapidly here and feebly there, yet rapidly in the main; as it seems to have progressed during the decade, we feel that it is slow. But in our impatience we must not forget that the medical profession is, of necessity, in advance of the people on these subjects. We must wait for them to understand the significance and practical importance of measures, before we hurry them up to their adoption. Meanwhile, doctors, are we ourselves responsible for any of these tardy movements? You who come from States that have not yet organized Boards of Health, are you or any of you responsible, in whole or in part, for their non-action or for their refusal to act? You who come from States whose Boards have but a feeble existence, are you responsible in any degree, by opposition or by indifference, for the crippled existence they lead?

I am not about to preach a sermon or read a lecture, but I shall take the liberty to ask a few questions. Have we not crippled sanitary work, by claiming for it results that are not yet warranted? Have we not urged as facts in sanitary science, what in truth was nothing more than theory, and sometimes crude theory, too? In dealing with the people of our several States and their law-givers on these subjects, is it wise for us to create expectations of sanitary organization and labor that may not be realized? Will we not be wise if we preach a gospel of facts—assured, established, incontrovertible facts—sanitary facts that are proved by experience and the uniform evidence of vital statistics? Our advanced ideas and theories about germs, contagiums, ferments, *et id omne genus*, about which we ourselves are in more or less of confusion and controversy—what are all these but stumbling blocks in the way of intelligent laymen and legislators? When we can prove to our neighbors that a certain stream, polluted at or near its source, causes sickness and death to many families, they will believe your established fact; but how much will they care about your theory concerning the precise nature and function of the morbid agency that is caused by the stream, especially if it leads you to a somewhat too persistent attitude on the question of practical moment—how to purify it? In this country all systems, or so-called sects in medicine, like all systems or sects in religion, are equal before the law. Have any of us ever been somewhat too arrogant or exclusive in the organization, or the proposed organization and management, of this public affair? In private relations and in private practice we hold, as we ought, to the observance of a code that ignores as unscientific all medical systems based on exclusive dogmas; but in public, where we meet all sorts of doctors, and their patrons as well as our own, as tax-payers and citizens, to discuss and devise measures of common interest, is not one man's medical theory as good as another's? Does not the experience of States that have most successfully inaugurated sanitary work, serve to demonstrate that the only platform on which hygienic effort can be successfully united is the platform of sanitary fact, and that the best men for the work are not necessarily those who think as we do, either in politics, medicine, or religion, but those who can and will do the most and the best work?

Have we not often failed to secure desired legislation by asking for too much at the beginning? Have we not given our cold shoulder to sanitary beginnings because we thought them too simple and inefficient? Cautious business men, when inaugurating new enterprises, favor small beginnings as a rule, and afterwards embark more in the scheme if it does well; have we not been too strenuous for beginning with a large capital of complex and perfect machinery, too complicated and expensive to be understood and appreciated by those who have the power to create? Do Minervas often spring, full grown and full panoplied, from the brains of our political or our medical Joves? Do not infancy and growth characterize the beginnings of human beings and human institutions alike? While we bear in mind (possibly with some conceit, ill concealed), that knowledge is power, are we not too apt to forget that ignorance also is power? Assuming that our sanitary

ideals are truer and higher than other men's—what force will best propagae them, conversion or compulsion? Finally, what better or more hopeful foundation for sanitaryorganization and its ultimate success, can be laid in any State, than the diffusion among its people, by all available methods, of pertinent, and reliable, and comprehensible sanitary knowledge? Has not this, in some cases, been too much neglected, and is not the cause of failure in some States to be found in this neglect of an important preliminary? If the people are once fully informed of their true interests in this matter, doctors theories and doctors differences, if thrust in at all, will not long delay their action—discarding us and our notions they will go straight to some practical result, simple, perhaps, but practical, and it will be our own fault if they dispense with our leadership. It is true medical men have made practical sanitation what it is; they have labored for it under ridicule and reproach; they have made its operations profitable and popular in many localities; but they must advance with the people and not too rapidly; the general, on horseback, advancing to battle, too far in advance of his troops, may be admired for his zeal but not for his discretion.

To subserve one of the purposes of this paper, something has been said concerning the methods by which sanitary organizations have been secured, and something also concerning the details of their first work, and but little of their main operations and permanent aims. That purpose may be further promoted by adding that while the main and ultimate purpose of the army is to fight, organization, drill and discipline are necessary preliminaries to its ultimate business; and our sanitary forces, when properly organized and drilled for their fight with sickness and death will naturally inquire, "at what points are we to attack?" The sanitary layman asks this question now. He is entitled to an answer.

By general and local sanitary surveys of the State, county or district to ascertain the conditions of land, streams and water-fronts, and when found faulty, to take the needed steps, or ask for the needed authority to remove the fault. This, of course, includes land drainage and the pollution of streams by sewage or by other agencies.

In cities and large towns, to carefully inspect, from time to time, the conditions of underlying soil; to regulate the building and sanitary safety of homes and other structures; to keep constant guard over the conditions of water supply; to supervise the removal of all filth, refuse and sewage; to keep constant guard over all food sold, including meat, bread, vegetables, milk, or any other article whose impurity or adulteration may engender disease; the burial or other disposal of the dead; the regulation of lodging-houses and crowded tenements, and the abatement of unsanitary nuisances.

The accumulation of vital statistics showing birth rate and death rate to population; the diseases prevalent and the rate of death according to age, sex and population, and the spread of disease.

These enumerated purposes are clearly within the scope of wise sanitary regulation, and are quite enough to occupy the minds and time of sanitary officials. Time and experience will add other functions, and there is plenty of field and occasion everywhere for sanitary work.

My duty would be imperfectly done in this review if I failed to call attention to the remarkable unanimity with which State medical societies, State Boards of Health, the American Public Health Association, this American Medical Association and the medical profession generally have expressed their approval of the organization and the action of the National Board of Health. The only valid objection ever urged to its functions, or rather to its possible action, is that based on the constitutional question. But it is apparent that there is a quarantine work to be done on the sea-board, and a quasi-quarantine work on the inter-State lines of commerce, whether by river or rail, which the individual States cannot always do. If the functions and work of the Board be confined to the work that States clearly cannot or will not do, the constitutional difficulty will not be serious. But whether serious or not, they are not lessened by devolving them on a bureau instead of a board. On this question the people will soon decide in whose hands they prefer to entrust their health, lives and commercial interests, and until they have decided the question is not settled. Meanwhile, it is gratifying to know that medical sentiment is nearly unanimous for a National Board.

Perhaps it is expected that something will be said of the effect of some recent discoveries on sanitary theory and policy.

The very recent investigations by Pasteur, Koch, Chaveau, Spina, Cheyne, and many others, into the nature of the bacillus and other germ forms, are promising remarkable results. Koch's seeming discovery of the tubercle bacillus, and the evidence produced that it is the specific germ by which tubercular phthisis is produced and may be transmitted, seems likely to begin an epoch of great moment in the study and treatment of this and of many other diseases. But before medico-legal sanitation can avail itself of these discoveries for the prevention or the mitigation of disease, very much must yet be learned respecting the laws that govern the life, the propagation and the transmission of disease germs. We must know, as to these bacilli germs, the laws of acquired or inherited receptivity which control their introduction and development in individuals and families; the atmospheric, telluric and other external conditions which modify their power and action in the larger aggregations of society; the methods by which they pass from person to person (we know, for instance, that the tubercle bacillus may be inoculated, inhaled or imbibed); the duration of the incubative period; and the chemical, catalytic or other action by which their effect is produced. Our knowledge on these points must be substantially exact, or be so demonstrated and demonstrable as to pass into the domain of established and popularly accepted fact, before sanitary architects can build on it as on a solid foundation. One rule which long experience has thoroughly justified in other and similar diseases, is strongly confirmed by our new knowledge, and that

is the requirement of the perfect isolation of the infected from the uninfected. Additional importance is also given to a rigid inspection of milk and meat.

We seem, indeed, to be on the eve of great discoveries in the etiology and pathology of disease, which, without doubt, must greatly increase our practical knowledge and improve our treatment of many important maladies. As medical practitioners, if we cannot individually help to hasten the anticipated result, we can help to swell the multitude who anxiously wait for it; but as medico-legal sanitarians, impatiently waiting for newly and firmly established truth, on which to build improved hygienic and sanitary methods, we, metaphorically, hold our breath.

REPORT OF A CASE OF GASTRO-ELYTROTOMY, IN IN THE SECTION ON OBSTETRICS AND DISEASES OF WOMEN OF THE AMERICAN MEDICAL ASSOCIATION.

BY WILLIAM H. TAYLOR, M.D., CINCINNATI, OHIO.

On the 17th of May, 1883, I was requested by J. C. Mackenzie, M.D., to see a case of protracted labor with him. From the doctor, who kindly furnished the notes for my report, I obtained the following history:

Mrs. M., American, 32 years old, primapara, apparently healthy, 4 ft. 7 inches high, good family history, with exception of considerable pain in abdomen for past six weeks has been healthy during her pregnancy.

On the 13th inst., began to have premonitory labor pains, which have continued to increase to present, except as temporarily relieved by the use of chloral and morphia. The membranes ruptured about 9 P.M., 14th inst., the os then admitting one finger. The head was felt presenting. These general phenomena continued until when first seen by me on the 17th. The conditions were: No appetite; had a care-worn expression; very prominent abdomen, which was not tender on pressure; pulse 120, temperature 101½°; pains severe, and violently expulsive; the os uteri about the size of a silver dollar; the head presenting, but so covered by a large caput succedaneum that I could not determine the position; but little change was produced in the position of the head by uterine action.

It was determined to apply forceps. Ether was administered, and after considerable difficulty because of the close contraction of the os around the head and the diminished diameters at the inferior strait, Elliot's forceps were adjusted. Traction was made at intervals for about an hour with no good effect, the head remaining movable above the brim. Laying aside the forceps, I endeavored to introduce my hand, with view to version, but was unable to pass the whole hand because of the contraction of the outlet. I was, however, able to reach the promontory with the index finger, leading to an estimate of the antero-posterior diameter of the superior strait as less than three inches.

Dr. G. Brühl was now called, as we believed craniotomy alone would suffice to accomplish the delivery. Dr. B. desired to make further effort with forceps, and after much effort introduced the Busch blades, but with no avail. I now perforated the head and adjusted the Braun-Simpson cranioclast repeatedly, with no better result after powerful effort than each time to bring away the fragment of bone caught in the instrument.

Dr. Brühl desired to attempt version, but although a leg was caught no effort availed to change the position of the child.

Some six hours had now elapsed since I first saw the woman, her pulse was becoming weak and more frequent, and the os and vagina were so œdematous that we could no longer touch the head; we therefore summoned N. P. Dandridge, M.D., with a view to abdominal section. Upon his arrival the question of operation was discussed. Cæsarean section was considered because of the rapidity with which it could be executed, but after deliberation it was determined to attempt "Thomas" operation as the less severe, and, therefore, less likely to prove fatal from shock in the enfeebled condition of the woman. Porro's operation was not suggested.

The patient was much exhausted with a very rapid, feeble, pulse, and elevated temperature; the fundus uteri was well to the right and the child's head could be felt in the left iliac fossa. Owing to this obliquity, the left side was selected for the incision instead of the right as usual, for it was thought the os uteri would be more accessible from the left. The preparations for the operation were soon made. The room was lighted by a single lamp, so to secure sufficient light, several candles were tied together and two torches thus made, the limited number of assistants made it necessary to entrust the lights to two women friends, who held the candles with their heads averted for fear of seeing the blood during the operation, and more than once we were embarrassed from the lights being improperly held. The woman was etherized and then placed on a kitchen table. Dr. Dandridge, as Surgeon, standing on the left of the woman and I just to his right, Dr. Brühl using sponges on the right of the woman and Dr. Mackenzie caring for the anæsthesia. The incision was commenced above and just outside of the spine of the pubis, and was extended parallel with and about three fourths of an inch above Poupart's ligament to a point somewhat beyond the anterior superior spine of the ilium, the subcutaneous fat which was quite thick, was divided and the aponeurosis of the external oblique and the underlying layers of muscular fibers carefully incised on a director, the full length of the external wound. The transversalis fascia was then carefully divided on a grooved director, the deep epigastric artery was cut and at once secured with hæmostatic forceps and then ligated, so that the amount of hæmorrhage during this part of the operation was small. Dr. Dandridge carefully stripped the peritonæum from the iliac fossa with his finger, when I placed both hands in the wound, gently pressing back the peritonæum and retaining the subjacent bowel.

Dr. Dandridge passed his left index finger into the vagina and forced the vaginal wall into contact with the right hand in the external wound. It was thus

possible to determine the thickness of the vaginal wall and make sure that the bladder was not intervening. A small opening was then made in the vaginal wall with scissors cutting on to the finger in the vagina; this opening was enlarged by a slightly curved blunt-pointed knife. While the knife was still in position I passed my finger along its back into the vagina and hooked it securely into the os; the vaginal wound was then enlarged, principally by tearing, Dr. Dandridge's hand passed through the wound, readily seized the leg, which had been caught in the effort at version, and drew it into the wound, expecting to complete the delivery easily; but owing to the firm contraction of the uterus around the child, this effort failed. Dr. Brühl sought the other leg, but was also unsuccessful in effecting version, but with the Braun-Simpson cranioclast the head was secured and extracted, the placenta followed at once; the uterus contracting well, the wound was washed out with a carbolic solution; a large drainage tube was passed through the wound into the vagina and projecting from the vulva, and the edges of the external wound closed by sutures. During the operation and at its termination a half ounce of whisky was injected into the rectum, the woman was placed in bed with hot bottles about her, morphia sulph. gr. ¼ and atropia sulph. gr. $^1/_{60}$ were given hypodermically, with directions to give morphia sulph. gr. ⅙ and half an ounce of whisky every two hours. A bandage was placed around the body. The child probably weighed six pounds. The operation was complete about 9 P.M.

The shock of the operation, considering the state of the patient, was certainly less than was to be expected, and not to be compared to that which would have followed Cæsarean section. I believe if the latter had been undertaken the woman would have died on the table. Five hours after, her pulse was better than before the operation, and twelve hours after the operation the temperature had fallen and the pulse was stronger and a little less frequent; but this slight promise of recovery was not verified, and she died forty-four hours after delivery, having in the meantime received the most approved treatment for such cases, viz.: stimulants, anodynes, the use of the "ice cap," "Kibbee cot," etc.; her urine was freely secreted and drawn several times by catheter; her bowels were moved by enemata.

Autopsy.—Sixteen hours after death the weather was warm, and there were some evidences of decomposition about the body; slight cadaveric rigidity; nutrition apparently good; abdomen greatly distended and tympanitic; a wound in the abdominal wall 4¾ inches long, situated upon the left side above and parallel to Poupart's ligament, extending from the anterior superior spine of the ilium to the spine of the pubis; the edges of the wound were united by sutures, and when these were removed it was discovered that no union had taken place, but that the wound was occupied by a small quantity of dark coagulated blood. When the peritoneal cavity was opened a small amount of gas escaped, probably from decomposition, as no other source for it was found; and some emphysema of the tissues existed. The greater part of the abdominal distension was due to gas contained in the stomach and large intestine. There were not the slightest indications of inflammation of the peritonæum; no adhesion existed, and no inflammatory products could be detected, although carefully looked for. The bladder was intact; there was a tranverse incision in the left side of the vagina about an inch below its attachment to the cervix, and extending from this upward to the uterus, but not involving it, was a longitudinal tear. The cervix uteri was extensively lacerated, and there was also a laceration in the posterior wall of the vagina, about on a level with the margin of the pouch of Douglass, but not involving the peritonæum. There were two transverse tears in the posterior wall of the uterus, one an inch in length, an inch and a half above the os uteri; the second two inches in length, an inch and a half above the first; these did not extend deep into the muscular tissue.

The diameters of the straits of the pelvis were carefully measured, after all the soft parts were removed, the periosteum only remaining.

SUPERIOR STRAIT.

Antero-posterior diameter,	3⅜	inches.
Transverse "	3⅞	"
Right oblique "	3⅞	"
Left " "	3¾	"

INFERIOR STRAIT.

Extremity of sacrum to pubis,	3⅝	inches.
Transverse	2⅞	"

At the brim of the pelvis corresponding to the symphysis pubis there was a projection backward of the bone, to the extent of ⅜ of an inch, diminishing the conjugate diameter to that extent.

The other organs were not examined.

Remarks.—The subject of gastro-elytrotomy has been so thoroughly considered by H. G. Garrigues, M.D.[1], in his exhaustive monograph, that no historical or theoretical review at my hands would be justified, but the operation has been so seldom performed that every practical point which can in any wise add to our knowledge and just appreciation of its value is entitled to careful study. The case which I have had the honor to lay before you, while unhappily it can not be credited with success, still it offers favorable answer to some theoretical objections. The earlier operators (except Baudelocque) believed that the operation was not feasible on the left side, because of the presence of the rectum, and Garrigues urges the attempt when opportunity should offer. Such opportunity presented in Hime's case and again in ours, because of the right obliquity of the uterus. The incision was accordingly made on the left side, affording ample space for the removal of the child, and as unfortunately we had occasion to see without injury to either bladder or rectum. Upon this point Dr. Dandridge, says: "The danger of making the incision on the left side, namely—wounding the rectum, is, I believe, entirely theoretical, on the contrary, from the experience of this single case I believe that the left side possesses decided advantages

[1] *N. Y. Med. Journal*, xxiij., *Am. J. Obstet*, Jan. 1883.

over the right. The operator is enabled to insert his left hand into the vagina, and thus have the right free to use the knife or scissors in opening the vagina —a critical point ; the use of the finger in this manner, is, I am sure, much safer than a plug of wood as has been suggested, and renders the use of an instrument in the bladder superfluous, as you can easily determine whether or not the bladder is intervening by the thickness of the tissues between the fingers. Again the sense of touch may enable you to feel and avoid an artery in the wall of the vagina, as was done by Skene."

Objection has been made to the operation because of injury to the peritonæum in raising it from the iliac fossa. In the case narrated, no difficulty whatever was experienced in lifting the peritonæum. The statement of Hime[1] upon this point may be cited as our own: "The peritonæum being much more ample than in non-pregnant women, and hanging in folds at the bottom of the wound." Prof. Kinkead,[2] in addition to objecting to operating on the left side, expresses the opinion that the peril from hæmorrhage would be greater in gastro-elytrotomy than in Cæsarean section. Theoretically, I cannot agree with such apprehension, and our practical study positively controverts it. We expected some hæmorrhage, and were prepared for it. The deep epigastric artery was cut, but its divided ends were seized with hæmostatic forceps, and but slight bleeding occurred.

The introduction of the finger into the vagina, instead of a wooden plug, as at first proposed, is, as suggested by Skene, of great advantage in aiding the selection of the proper place for cutting its wall. The clipping of the wall at the point made prominent by the finger is a very easy and safe method of opening the vagina. After the opening was made, the fingers were chiefly used for its enlargement to a degree sufficient for the passage of the child. This part of the operation, which is considered the most dangerous because of the liability of hæmorrhage, was almost without bleeding, so that I believe I am entirely truthful in saying that not more than two ounces of blood were lost during the whole operation, in this respect fully verifying the recently expressed opinion of Prof. W. M. Polk, that the operation "involved little or no danger to the ureter, blood-vessels or tissues."[3]

Having had opportunity some years since to perform the operation on the body of a woman far advanced in pregnancy, I was impressed with the great difficulty of delivering the child through the incision, but I now believe that such difficulty largely results from post-mortem rigidity, which is usually present when such operations are made on the cadaver. In our case, no difficulty was experienced in verting the uterus by pressure on the fundus, the finger alone sufficed to bring the expanded os uteri to the opening in the groin. I was surprised at the facility with which the dilated os, the vaginal wound, and the external incision were brought into close relation and direct line, so that a straight instrument, *e. g.*, the bone forceps, could be passed into the uterine cavity. To explain this abnormal facility, I recall to you a well-known result of such protracted labors, which I believe has not been referred to in this connection. Lusk, speaking of labor where the contraction of the pelvis is such as to keep the head at the brim, says: "The uterus retracts up over the head of the child; if the head does not descend, the vagina is drawn upward."[1] Now, in this process, peculiar to the cases which are especially adapted to this operation, we have developed the conditions of vagina materially facilitating delivery through the wall, also, by this extension, the danger of injury to the ureter is greatly diminished.

Prof. Kinkead,[2] in commenting on the cases reported up to 1880, says: "It is worthy of note that in none of the recorded cases did the patient suffer from the distressing vomiting so common after the Cæsarean section," and our case adds one more of this favorable condition after operation, and also another (the fifth) in which the bladder was not injured.

The honored projector of this operation, Prof. T. G. Thomas, when he made his first report upon it, said, "All that I am striving to prove is that it *probably* has fewer and less grave dangers attendant upon it than the Cæsarean section has,"[3] and allow me to add my humble testimony to that of others, that experience *does* prove it.

APPENDIX.

CASES OF GASTRO-ELYTROTOMY PREVIOUSLY PERFORMED.—*Case 1.* (*American Journal of Obstetrics*, May, 1870.) Prof. T. G. Thomas. Woman, multipara, sick ten days with pneumonia. Child turned, born alive. Mother and child died in an hour.

Case 2. American Journal of Obstetrics. April, 1878. Prof. A. J. C. Skene. Primipara. Contracted pelvis. Version attempted, craniotomy performed; abandoned because of œdema of parts and narrowness of pelvis, forty-eight hours after commencement of labor. Prof. Skene operated; death in seven hours;

Case 3. American Journal of Obstetrics, February, 1876. Prof. A. J. C. Skene. Multipara rachitic; child previously by craniotomy, another at seventh month, another by induced labor in ninth month, with version; child lived for several months.

October 29, 1875, at full time; early in labor membrane unruptured. Gastro-elytrotomy. Mother and child saved.

Case 4. Am. J. Obstet., October, 1877. Prof. A. J. C. Skene. Primipara, æt. 37; great deformities. Operation four days after labor began; artificial dilatation of os uteri; great difficulty in operation because of deformity of woman. Mother and child saved.

Case 5. Am. J. Obstet., April, 1878. Prof. T. G. Thomas. Primipara, æt. 20; "very small and undeveloped; labor far advanced;" operation December 3, 1877. Mother and child saved.

Case 6. London Lancet, 1878, vol. II, 656. Thos. Whiteside Hime, Sheffield, Eng. Ninth pregnancy; æt, 37; cancer of recto-vaginal septum obstructing vagina; had been confined to bed eleven

[1] *London Lancet*, II, 656, 1878.
[2] *Dublin Med. Jour.*, May, 1880.
[3] *N. Y. Med. Journ.*, May 19, 1883.

[1] Am. Gyn. Trans., iv, 368.
[2] L. c.
[3] *Am. Jour. Obstet.*, May, 1870.

weeks, and for 48 hours had been vomiting incessantly; has had diarrhœa several days.

Operation July 14, 1878. Incision made on left side. Child saved; mother died in two hours.

Case 7. Brit. Med. Jour., November 30, 1878. A. W. Edis, London, Eng. Primipara; medium stature; pelvis small, undeveloped, conjugate not exceeding 2½ inches. Forceps tried twice; sudden development of large thrombus in right labium.

Gastro-elytrotomy about 18 hours after labor commenced; live child delivered. Mother died from collapse 40 hours after operation.

Case 8. Am. Jour. Obst., January, 1880. W. R. Gillette, M.D. Primipara, æt. 23; rachitic; 4 ft. 4 in. high, antero-posterior diameter 1½ inches; child dead before operation.

Gastro-elytrotomy eighteen hours after rupture of membranes. Much difficulty in dilating os uteri, which was finally incised with scissors. Great difficulty in delivery of child; forceps, version and craniotomy failed; cephalotripsy and cranioclast succeeded. Mother recovered.

Case 9. Am. Jour. Obstet., October, 1879. J. T. Everett, M.D., Sterling, Ill. Removal of calcified fibroid of uterus. Woman recovered.

DISCUSSION.

N. P. Dandridge remarked, in regard to Dr. Taylor's paper, as follows:

I have but little to add to the details that Dr. Taylor has already given of the case he has reported. I desire, however, to emphasize what he has said of the facility with which the operation was accomplished. The conditions by which we were surrounded were certainly not such as were favorable for the performance of an unusual and difficult operation. The absence of sufficient light was at times especially embarrassing. This was particularly felt during the first steps of the operation when the abdominal muscles were being incised and there was danger of wounding the peritoneum.

This membrane once recognized and pushed back, the subsequent procedures were guided more by the sense of touch than by sight. The number of assistants present was too limited, and this was also an embarrassment. These facts are especially dwelt upon to show that the operation may confidently be undertaken without special preparation of any kind, and with such means as are ordinarily at command for the performance of any surgical procedure.

In most of the cases of laparo-elytrotomy which have thus far been reported, the conditions requiring the operation have been recognized either before or early in labor, and thus the operator has had time for full consideration of all the necessary steps of the operation, and to prepare himself for the complications which are likely to arise. In the case reported it was only after prolonged efforts had been made that the impossibility of delivering through the natural passages was determined, so that the woman was in such a condition of exhaustion that it was absolutely necessary to at once determine the course we should pursue. For my part, I was summoned without any knowledge of the previous or existing conditions, and was influenced in urging the performance of laparo-elytrotomy rather than Cæsarean section, which at first sight seemed certainly easier of execution, by the exhaustion of the woman, which was such that it seemed scarcely possible that she could survive so severe a shock.

I was, I confess, both surprised and delighted with the facility and rapidity with which the operation was concluded—an operation I had always regarded as necessarily intricate and requiring considerable time. The hæmorrhage we encountered was trifling; the epigastric artery was readily secured, and there was really no appreciable bleeding from the wound in the vaginal wall. The experience of this case, contrary to what has been said heretofore, leads me to think that the left side possesses decided advantages over the right, for when the first steps have been completed and the peritoneum stripped back, the left hand inserted into the vagina enables you to appreciate between your fingers the thickness of the intervening tissue, and thus determine whether you are free of the bladder or not, and it is certainly much safer to cut directly upon the sensitive finger rather than a plug of wood, as has been suggested. In all these manipulations the operator has his right hand free for the use of instruments, which to most is an advantage if not a necessity.

I was a student in the College of Physicians and Surgeons when Dr. Thomas reported his first case before the class, and I well remember the impression the recital made upon me at the time. Once I have had an opportunity of assisting at the operation upon the cadaver—the case referred to by Dr. Taylor, and in our recent experience was much impressed with the greater facility with which it could be executed upon the living.

THE SURGICAL TREATMENT OF INTESTINAL OBSTRUCTIONS.

BY H. O. MARCY, M. D., BOSTON, MASS.

[Presented to the Section on Surgery and Anatomy, Cleveland, June, 1883.]

It may be accepted as an undisputed fact that our operative art has won its greatest triumphs during the last decade in the field of abdominal surgery. The peritonæal cavity is no longer the "terra incognita" of the surgeon, and its invasion is not attended with the fears or dangers of even a very recent period.

The removal of ovarian tumors is not invested with serious dangers. Hysterectomy is considered a justifiable operation in quite a variety of diseases. Kidneys are extirpated, with a fair showing of success. Biliary calculi are not exempt from surgical interference.

Gun-shot wounds of the abdomen and intestines are no longer treated with opium, and death awaited as almost certain, but the injured portions are, so far as possible, restored in their continuity or resected; and the removal of malignant growths involving the digestive organs is even advocated by some, whose opinions are worthy of the greatest respect.

Crowned with such laurels, is it surprising that the surgeon demands a revision of the entire question of

operative interference in intestinal obstructions? Little can be added by any student of the subject to the masterly and classical literature already contributed upon the causes, frequency, course, symptoms, pathological changes and post-mortem appearances. Dr. Fagge in his able article upon intestinal obstructions[1] states "that in Guy Hospital, in the last fifteen years there had been seventy-five fatal cases, and of these seventeen were from strangulation produced by some solitary omental or mesenteric band."

Dr. Brinton collated 600 cases; of these 31 per cent. were from bands, 43 per cent. from intussusception, 13 from stricture, and 8 from torsion. He gives it as his opinion that most of these cases were subject to surgical relief. Dr. Fagge writes: "I regard the facts derivable from our post-mortem records as indicating no insurmountable obstacle to the success of an exploratory operation in a majority of the cases of true intestinal strangulation which are to be found in these records."

It would be very interesting to pursue this line of inquiry farther; pathological literature, yea, our own clinical experiences are full of significant histories with the added query "of what might have been."

Intestinal obstructions may well be subdivided into, First, The chronic, which is gradual. Second, The late acute which usually supervenes upon the first, and, Third, The early acute. Under these divisions are included impaction of fæces, fibrous and cancerous strictures, polypi, tumors, abscesses compressing the bowel, intussusception and injuries; but we shall discuss only the question of acute obstructions.

The first and most important consideration is not only an accurate but a prompt diagnosis. Every hour brings fresh complications which obscure and render more difficult positive conclusions, and, just as in external obstructions of the hernial class, seriously endanger the well-being of the patient. The comparison with hernia would emphasize the consideration of relegating the entire class of internal obstructions to the surgical domain, upon precisely the same grounds as external obstructions. Both are mechanical and both should be submitted to wise surgical procedure. Within this realm should be included the use of rest, opium, cold applications, and just as appropriately as to a fractured limb or an inflamed knee joint.

Granted that the diagnosis of complete intestinal obstruction has been determined, the earlier operative interference is decided upon the wiser and better. When nothing is done, we are aware a certain number of cases recover, but the percentage under the wisest medical management has ever been small. A twist, an intussusception, an entanglement by a solitary firm band, producing a complete occlusion usually goes on rapidly to danger from local interference in circulation, arrest of nutrition, compression, reflexive suffering, peritonitis, resulting gangrene, collapse and death. This series of symptons is generally one of geometric ratio of progressive dangers. Knowing the end all too well from the beginning, let wisdom dictate an early interference. What may be done short of exploratory abdominal incision?

[1] Guy Hospital Reports, 1868.

The gaseous distension, which causes very much suffering, and often distressing vomiting, may be usually only partially relieved by puncture. We have known a number of cases thus benefited. Even a considerable-sized trocar has been used, and is generally necessary, for the intestinal contents are usually of a thin gaseous character, the gases being intimately blended with the secretions. This is much less dangerous than might have been supposed, since the eversion of the soft, velvety mucous lining with its villi, quite securely plugs the opening through the muscular and peritoneal coats of the intestine made by the trocar, and prevents the exudation of its contents into the peritoneal cavity. The aspirator used for such a purpose is much the safer instrument, since relief may be secured through a smaller canula. This procedure, if successful, relieves the pressure upon the constricted portion, lessens muscular paralysis, thereby in proportion restoring peristaltic movements of the bowel, which may result in undoing a twist. Dr. Warner's spiral trocar is claimed to be of great value. This is usually palliative rather than curative, and much precious time is lost in awaiting its results.

In intussusception, the old Hippocratic plan of inflation may be tried, and this is much more likely to succeed under anæsthetics. Care must be used not to rupture a weakened intestine. Dr. Thomas Hawkins, of New York,[1] strongly advocates hydrostatic pressure, and gives a number of successful cases. His three rules essential to success are: First, the use of the utmost possible force, but with great care and caution. Second, persistent and continuous repetition of the injection until the passage is effected. Third, the adaptation of a suitable position for the patient. It seems easy to believe that fluid must possess material advantages over air. Indeed, it is a reversal of the old classical remedy of a mercurial column applied from above by its administration per orem.

Such measures having been considered, it remains for us to repeat our emphasis in favor of early gastrotomy. We believe this should never be undertaken without the most careful antiseptic precautions. The incision should be made in the median line, since we can never be entirely certain of the location of the obstruction, and the opening in the median line is not only a safer one for many reasons, but gives the greater advantage for a careful examination of the abdominal contents. The greatest mechanical difficulty lies in the distended condition of the intestines above the obstruction, giving oftentimes great trouble in their control, and by the rolling out of intestinal coils causes exposure of large peritoneal surfaces. This is important to prevent as far as possible, since a rapid lowering of temperature results from such exposure, and may induce shock, and also greatly increases the dangers from germ infection. The aspirator should be at hand on this account, and its use after the incision may prove of the greatest value.

Having rendered manageable the intestines—and this is best done before any large opening is made in the abdominal wall—enlarge the incision sufficiently

[1] *Medical and Surgical Reporter, 1876.*

to make an easy and careful inspection of the parts. Through fear of a long incision, much confusion and damage may and has resulted, by a blind groping after the obstructed portion. This found, be guided by its factorage. If there are long bridles of peritoneal bands, then simple division may be all that is required; if a twist or intussusception, perhaps these are as easily remedied. What shall be done if necrosis of the intestinal tube has already supervened? One of two devices only is left for selection. Artificial anus, i. e. stitching the ends of the canal into the wound, with the hope of some further operative procedure, or resection of the necrosed portion, with a very careful adjustment of the divided ends and mesenteric attachment. This must be done in such a manner as to bring the peritoneal surfaces in approximation, and in this way the wounded edges and mucous membrane are all turned into the intestinal cavity. Silk may be used, but at times proves an irritant. Catgut, if old, may be reliable, but frequently is absorbed too early, and properly prepared animal ligatures are to be preferred.

We are all familiar, indebted especially therefor to the careful studies of Sir Spencer Wells, with the rapid exudative repair processes which take place under the opposed peritoneal surfaces. In one instance, where we resected seven inches of the necrosed small intestine and death supervened thirty hours afterward, the exuded lymph had entirely encircled and covered in the approximated parts.

Having restored the continuity of the intestinal canal, readjust its relationships and close the abdominal wound. This is effected precisely as in ovariotomy, its essential factor being, as with the intestine, a careful approximation of the peritoneal surfaces. For this purpose let the stitches always be taken from within outward, inserting the needle about one-half an inch beyond the divided peritoneum. We believe gastrotomy should never be undertaken without the most careful antiseptic precautions. Many superficial students and opponents of antiseptic surgery refer to the spray as the summum bonum of the method, when, at best, in reality it is a minor factor. He who becomes familiar with the underlying broad principles of sound philosophic reasoning, the careful details of method, and the astounding array of demonstrated facts, will need little urging to give antiseptic surgery his enthusiastic support. Let it be held in remembrance that the whole endeavor of antiseptic surgery is not a wound benefited by carbolic acid or other medication, but thereby to secure a wound free from all germ infection, surgically clean, aseptic in character, as nearly as possible one like in condition to a subcutaneous injury.

If this has been effected, and this is not alone the theoretic aim of Mr. Lister and his followers, but is as a rule a sure accomplishment, then we may rest assured that our patient, if operated upon early, will probably recover. Great care in such operations must be taken not to reduce the temperature of the body, for heat is rapidly lost from the exposure of large surfaces of the peritoneum, and by the retention of its equilibrium a better capillary circulation is maintained, and shock is in large measure avoided.

Hæmorrhage is an exceptional and unimportant complication in this class of operations, since no large vessels are implicated. General and dangerous peritonitis is almost invariably septic, and with the exclusion of this factor, which may, as we have already claimed, be secured, a favorable prognosis can be given. In conclusion, let us be permitted to state that the operative surgeon should be guided by a wise consideration, based upon a thorough knowledge of the whole question, and that he is subject to the gravest of all responsibilities, remembering at the same time that the sins of omission are equally to be judged with those of commission.

ON A NEW METHOD OF OBTAINING PURE PANCREATIC JUICE.

BY L. B. TUCKERMAN, M.D.

[Read to the Section on Practice of Medicine, Materia Medica and Physiology, of Am. Med. Association, June, 1883.]

Physiologists are wont to employ one of two methods in obtaining pancreatic juice for purposes of experiment, viz., the method of Claude Bernard, and that of Ludwig and Bernstein. It is needless here to go into the details of either operation.

The method of Claude Bernard is open to the following objections:

1. Fixing, as it does, a temporary canula in the duct and collecting the secretion while the animal is under the shock of the operation, we can hardly assume the secretion to be normal.

2. This method offers but little opportunity for investigating variations in the character of the secretion dependent upon the period of digestion or upon the animal's diet.

The method of Ludwig and Bernstein is also open to objections, for:

1. The secretion of the fistulous tract kept open by the lead wire mingles with the secretion of the gland.

2. The irritation of the loop of wire in the pancreatic duct must must tend to keep the gland itself in a state of chronic irritation, thus altering the character of the secretion.

3. A considerable part of the pancreatic secretion is permanently diverted from the intestinal canal. This must more or less interfere with normal intestinal digestion and thus keep the animal in a pathological condition, thereby vitiating every secretion.

In view of these objections we think the conclusion of Dr. Flint a sound one—viz., "We are not disposed to admit that the fluid, collected by recent German observers from permanent fistulæ, represents physiological conditions." (Text Bk. of Phys. 1881, p. 271).

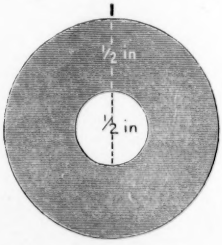
With a view of avoiding, as far as possible, the sources of error above enumerated, we sought to devise a plan by which the pancreatic duct could, like Steno's duct, be catheterized at will. During the past few weeks we have succeeded in so doing by means of a permanent fistula, opening into that part of the duodenum which lies directly opposite the mouth of the pancreatic duct. The outer opening, and the outer flange of the canula used, are precisely

like those of the ordinary canula for gastric fistula. The inner opening, however, is elliptical, its longer axis measuring ¾ inch, and its shorter ½ inch. The inner flange is curved in the direction of the shorter axis of the opening, the radius of the curve being ⅜ inch.

The details of Claude Bernard's method were followed as far as regards opening the abdominal cavity and drawing out the duodenum and head of the pancreas. The duodenum was then opened by a longitudinal incision at a point opposite the mouth of the duct, into which a probe was then passed. The canula was passed over the probe, the long axis of its inner opening being placed lengthwise of the gut. The latter was then stitched about the canula in such wise as to bring the mouth of the duct directly opposite the center of the inner opening of the canula. The position of the mouth of the duct was determined by means of a light thrown down the canula from a head mirror. The parietal peritonæum was then stitched together and to the gut about the canula, and the wound in the abdomen closed.

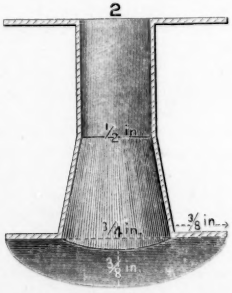
When the animal had recovered, it was found that the mouth of the duct was still opposite the inner opening of the canula.

The accompanying figures will give an idea of the canula, and of its relations when in situ.



1. Outer flange of canula—natural size.

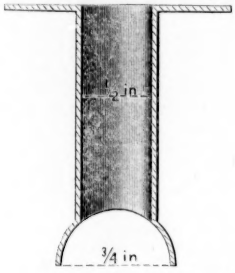
For catheterization of the duct the animal is laid upon its left side, held still by assistants, and light is thrown down the canula by means of a head mirror. We have best succeeded with a small glass canula drawn down to about one-half inch in diameter and



2. Section of canula in longer axis of inner opening.

slightly bent about one-fourth inch from the small end.

The fluid thus obtained is perfectly transparent, distinctly alkaline and with marked amylolytic, pro-



3. Section of canula in short axis of opening.

teolytic and emulsive properties. The advantages of this method are—

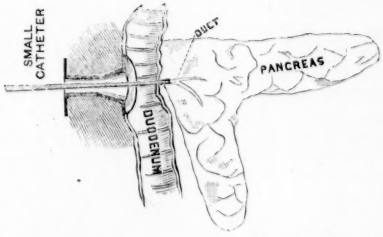
1. The animal is as nearly as possible in a physiological condition.

2. The fluid is obtained without causing the animal any marked inconvenience, and is unmixed with any other secretion.

3. The fluid can be drawn at any time.

The difficulties are: 1. No self-retaining catheter has as yet been devised, hence the experimenter must hold the small canula in place while the fluid is being drawn. This renders no little patience necessary in order to obtain the fluid in quantity.

2. Unless the mouth of the duct has been accurately fixed opposite the center of the inner opening of the permanent canula, the peristalsis of the gut



4. Section of duodenum, showing canula in situ with small catheter in duct.

may at times draw the mouth of the duct out of sight. This makes it specially difficult to catheterize the duct while food is passing through the duodenum.

The lines of experiment to which this method would seem best adapted are:

1. To determine what, if any, are the variations in the character of the pancreatic secretion during different periods of digestion.

2. To discover whether difference in diet effects an appreciable difference in the relative amylolytic, proteolytic and emulsive properties of the pancreatic secretion.

3. It may prove useful also, as Dr. H. P. Bowditch, of Boston, suggested to us, in studying the supposed relation of the spleen to the secretion of trypsin.

One other observation is perhaps worthy of mention here. It relates to the behavor of milk in the alimentary canal. Though physiologists tacitly assume that the primary digestion of milk is gastric, Roberis has shown ("On the Digestive Ferments," p. 41) that "tryptic digestion of milk is rapid, and leaves only a slight residue, whereas peptic digestion is slow, and leaves a larger residue;" while Ewald ("Lectures on Digestion," p. 90) has proven that the pancreas, even in new born animals, is very active. Now, in this animal, milk, when fed alone, passes immediately and almost unchanged into the duodenum, where it appears mingled with bile and pancreatic secretion. If more extended observation shall show that the primary digestion of milk is wholly or in part tryptic rather than peptic, taking place in the duodenum rather than in the stomach, we have a physiological basis for a line of treatment clinically successful in certain digestive disorders of infancy, viz.: The exhibition of alkalies and drugs that, like ergot, nux vomica, etc., stimulate the unstriped muscular fiber. In such a case simple atony of the muscular walls of the stomach would seriously retard the process, even though the gastric secretion were perfectly normal. Moreover, one objection to the use of pancreatin, viz.: that it is destroyed in the stomach, is removed, if, when taken with milk or other fluids, it be rapidly passed into the duodenum.

BLOOD-LETTING AS A REMEDY IN THE TREATMENT OF ECLAMPSIA PUERPERALIS AND "ACUTE PNEUMONIA."

BY T. C. M'CULLOCH, M.D., OIL CITY, PA.

On the 2d day of July, 35 years ago, I was called to attend Mrs. John Carson, of Armstrong county, Pa., in labor with her third child.

She was a large, muscular woman about six feet in height and built in proportion. A short time before my arrival, she was delivered of a still born child. The womb was contracted, the afterbirth expelled. There was no hæmorrhage, and she was comfortably "put to bed." I say put to bed, as in those days women were nearly all delivered on the floor on their knees, and afterwards put to bed; apparently she was all right.

Whilst seated at the breakfast table enjoying my morning meal, after a seven mile ride, congratulating myself upon my "good luck," and easy made fee, I was startled by a scream from the nurse, followed by doctor! doctor! On entering her room, I found my patientin a *horrible* convulsion. I say "horrible," for what can be more horrible to the practitioner than a woman convulsed, distorted and blackened by a puerperal convulsion; muscles convulsed, features distorted; respiration gives forth a hissing sound, froth issues from between the clenched teeth, the eyes are rolled upward, and spasmodically jerked from side to side. Truly the condition of the patient is "horrible" and well calculated to strike terror to the friends and alarm the doctor, especially if he is young and inexperienced.

At this period in medical therepeutics, there were but few remedies. Blood-letting, speedy delivery, and opiates in some form, were laid down as the esentials.

The room where the patient lay was small. The head and foot of the bed were wedged in between the wall and the partition, and as each proxysm occurred she actually shook the whole building. I bled this patient six times, once from both arms at the same time, allowing the blood to flow in full streams without regard to quantity. Her hair was cut off and cold applications applied to her head. She was cupped on the temples and back of the neck. She had twenty-three convulsions, occupying a period of twenty-four hours, during which time she was insensible. Her tongue was bitten, lips swollen, and face bloated, presenting an appearance unrecognizable to her friends.

Now, I think I hear the reader say, between the *doctor* and the *disease* she was a pretty well used up woman. But the convulsions ceased and she made a good recovery. She raised quite a large family. Had no return of the disease, but she was always bled once or twice prior to her confinements.

And let me say here that I believe I have prevented the occurrence of more cases of convulsions by timely blood-letting than I ever was called on to treat.

This lady afterwards gave birth to two sons who became prominent physicians — the oldest, Dr. Thomas Carson, who is at this time practicing in Saltsburg, Indiana County, Pa.; the other, the late Dr. John Carson, of Leechburg, Pa., who fell a martyr to his profession during a malignant epidemic of diphtheria, which prevailed in Armstrong county three winters ago. He died from a wound upon his hand, poisoned from the secretion while in the act of swabbing a child's throat.

This case of Mrs. Carson's I give as a typical case of the disease and the treatment thirty-five years ago.

Now, according to more recent views as to the cause, and the pathology of this disease, this was very bad treatment. Has the character of the disease changed? We know that the treatment has changed. But have there been any better results? Let us see. "I speak as to wise men, hear ye what I say." Upon looking over my Obstetrical Register, which I have kept faithfully from the first to the last case, noting all abnormal points in the labor, and writing out in full a history of all bad cases, I find I have seen fourteen cases of this disease, eight of which were patrons of my own; six I saw in consultation with other physicians. Of these eight cases seven were primpara. In one case I performed craniotomy; six were delivered by the forceps. But one, the case of Mrs. C., the child was born before the convulsions took place. All the cases were heroically bled, and all recovered but one.

My first case was in the summer of 1848, my last case was in the fall 1878—comprising a period of thirty years.

Now, this has been my experience with the lance, in combatting this formidable disease—eclampsia puerperalis, and I give it to the profession for just what it is worth and nothing more. You may say that such treatment is barbarous and belongs to the dark ages. I have heard men say so; medical gentlemen, too, who stand high in the profession; men whose hypodermic syringe never becomes rusty for want of use; men who never bled a patient in a practice of ten or fifteen years.

I heard a prominent practitioner not long since relate his experience with the lancet, which I think is too good to be lost. He said some ten years ago he had a case of chronic eczema which he was very anxious to cure. He gave him all the approved remedies. But the stubborn disease resisted all the treatment he could suggest. So he requested a consultation. An old physician was called for counsel, and after giving the old gentleman a history of the case and the remedies he had tried—which nearly exhausted the materia medica—the old gentleman remarked he thought the disease was caused by derangement of the *prima vie*, and as all other remedies had been tried he would recommend blood-letting. The patient was bled, and he made a rapid and complete recovery—most unexpected result. "Well," said the Doctor, "I began to think there might be something in this 'bleeding business,' so I bought myself a lancet and waited for a case. It came in the form of acute pneumonia. I bled freely, and my patient died promptly. I laid away my lance, and I have never used it since;" remarking he had no faith in a remedy which produced such unexplainable and unexpected results. If it cured the case of chronic eczema, I think it killed the case of pneumonia.

Prof. Charles D. Meigs says in his work published in 1842, called "Philadelphia Practice," that he has met with seventeen cases of eclampsia. Few were first pregnancies. He says: "If there be a case of disease in which a bold and daring use of the lance is demanded, it is the case of the puerperal convulsion." He says: "The patient should lose from 30 to 60 ounces of blood at one venesection."

Dr. Ramsbotham says in his work on obstetrics, published in 1859: "Bleeding is our great reliance. The lancet is our sheet-anchor." All authors up to about this period agree with the two distinguished authors above quoted, and indeed every practitioner who had any claims to possessing a respectable knowledge of his profession looked upon venesection as the "sine qua non" in the treatment of this disease.

Now, I think I hear you laugh, and sneer, and say, "This is old-fogyism — behind the times." Well, I will admit that in the last twenty years there has been great advancement in the science of medicine. New lights have sprung up in the profession. Scientific men, with the aid of the microscope, have seen wonderful things, and by chemical analysis have demonstrated to the profession that "uræmic poison" is the cause of all the convulsions that the parturient woman is heir to. And upon this hypothesis quite a revolution has taken place. The American profession especially have discarded the lance, and passed over to the new theory en-masse, and every pregnant female, who is suspected of furnishing a case of convulsions for the doctor, is requested to furnish a bottle of urine for examination and test. Albumen found is the harbinger of danger, and the physician is alarmed and anxious for the safety of his patient.

This brings to my mind a case I had some few years ago. I was called to attend a young lady in her first confinement. On entering her room I was struck with her appearance—face bloated so she could hardly see, complexion sallow, feet and hands swollen. I knew her when she was a girl, and I could not recognize her to be the same person. I inquired, "Have you any headache?"

"Yes, Doctor, I suffer a great deal with my head."

"Can you make much water?"

"No, not as much as I ought to make."

I made an examination, and found labor just commencing, which caused me to breathe a little easier. As I wanted time to prepare myself for the struggle, as I felt certain I was going to have a case of convulsions, I procured a bottle of her urine and went to my office. I applied the test, and found it highly albuminous. I was now fully convinced. I prepared myself with chloroform, hyd. of chloral, forceps, hypordermic syringe, etc., and awaited the call, which came the same night. On my arrival I found her in hard labor. Every time she turned up her eyes I thought sure she was going off in a convulsion, which made me anxious for her speedy delivery. I dare not bleed, for if I did and my patient died, and I was prosecuted for malpractice, the profession would not sustain me. They would swear she died from exhaustion from the loss of blood produced by the lance; so I resorted to the next best thing—speedy delivery, for all agree that if the woman was not pregnant she would have no convulsions.

Consequently with great difficulty I delivered with forceps a 12-lb. boy. Head squeezed; neck stretched; scalp bruised and tumefied, and to all appearance a dead child. But after some effort to resuscitate, I succeeded, but the child worked in convulsions for two days, caused, I have no doubt, by the abuse it received in hurrying it into the world. The mother got along without a bad symptom; on third day sat up in bed, washed and dressed her boy, and the fifth day I found her seated in a rocking-chair, bright, cheerful and happy. In this case, I got the convulsions in the wrong patient.

Dr. Playfair, in his late work of 1880, says, in speaking of the cause of eclampsia in pregnant women, "that in the more recent investigations as to the cause of death in this disease, the tendency of the profession for the last ten years is back to venesection." The rule is to bleed the patient as early as possible, so as to make a decided impression."

"As time elapses," says the same author, "the evidence accumulates to show that the relation between albminuria and eclampsia in pregnant women is not so universal as formerly supposed; that albuminuria is by no means necessarily accompanied by eclampsia. Cases are abundant where the albumen ap-

pears after the convulsions, the convulsions causing the nephritis."

It is also an established fact that convulsive attacks are common in pregnant women when there are no traces of albumen found in the urine.

The same author says: "The key to the liability of pregnant women to convulsive attacks, is no doubt found in the peculiar excitability of the nervous system in pregnancy, a fact which was clearly pointed out by Dr. Tyler Smith and by many other authors. The nervous system is in this respect not unlike that of children, in whom the predominant influence and great excitability of the nervous system are well established facts, and in whom precisely similar convulsions are of common occurrence on the application of a sufficient exciting cause."

And who, I ask, would think of referring the eclampsia of childhood to "uræmic poison" as a cause?

Whatever may be the pathological condition of the blood, incident to the pregnant state; whatever may be the cause which excites the nervous system to morbid action; whether it be a toxæmic condition, or a watery condition associated or not with albuminuria, in either case says Drs. Franke and Rosenstein: "There is increased tension of the arterial system, which is produced by the hypertrophy of the heart, which is known to be a normal occurrence in pregnancy."

Such being the case, does it not stand to reason and common sense, which by the way are always associated, that venesection, as a remedy, stands first on the list, to relieve arterial tension, and the congested nervous center, by unloading the blood-vessels and subduing the hearts action.

But modern theuputists tell us "we can do that without the lance, which is barbarous in its application. We have veratrum viride, aconite, etc., powerful sedatives to the heart's action.

But the *mischief* will be done before you get the action of your drug. "Well, we have our hypodermic syringe loaded with morphia guarded by atropia, which acts quick and powerful." So it does upon the brain, but not upon the heart.

Where is the practitioner of experience who has not seen a narcotized patient, in which the heart's action was going on regular full and strong, but the brain overwhelmed, respiration ceased when it was very difficult to tell just when the patient died?

Opium, like chloroform, sometimes causes death from an ordinary dose judiciously administered—venesection never, to my knowledge. No one in these days of therapeutic knowledge would advocate the use of the lancet to the exclusion of other remedies. Chloroform, hyd. chloral, bromide of potash, etc., are all right and proper in their place and at the right time, and I should feel as if I had not done my whole duty should I fail to employ them; but I assert here that the practitioner who would stand by the bed-side of a parturient patient having convulsions or the premonitory symptoms of eclampsia, having pain in the head, double or half vision, swollen hands and feet, with turned eye-lids, with a full and bounding pulse, and he failed to extract blood freely and the patient died, and he was prosecuted for malpractice, were I on the jury I would vote for conviction, albumen or no albumen in the urine; and nothing but Bright's disease of the kidneys, in her case being a well-established fact, would cause me to recommend him to the mercy of the court.

It is time medical men should think and be actuated by common sense, and not ride the hobbys of others all their life. I would rather have "three ounces of common sense," exercised at the bedside of a patient, than "ten pounds of finely-spun theory." The former makes a man act wise—the latter makes a man appear wise, but it is argued that the remedy was abused; every person who was sick was bled. Admitting this to be true, it is no argument why it should be abandoned altogether, and not used in its proper place.

Do not the present generation of doctors abuse their patients by their "anti-exhaustive treatment," and by their stimulating, brandy and milk course do more harm than ever the lance did? Why, thousands of patients at the present day, after a protracted illness, come out of the hands of the doctor confirmed inebriates, fit only for bar-room loafers.

Women in former days were bled for headache, backache, pains real or imaginary, and they grew fat, raised large families of healthy children, and lived to a ripe old age.

But in our day the hypodermic syringe has taken the place of the lance, and for their pains and aches they are chucked full of morphia daily. Sensibility deadened, nervous system unstrung, muscular system relaxed, and they become fit subjects of abortion or premature labor. Their children dwarfed and they die at a premature age.

Would it not be better if we would follow more the teachings of nature on this subject? Why, one half of the human family, and the best half at that, by a fixed law of nature, which is God's law, lose from six to ten ounces of blood monthly, and continue to average so for 30 years, being bled not less than 360 to 400 times in their life, for what purpose? To carry off the surplus blood, like a safety valve, to relieve their congested organs.

And yet if a man has double pneumonia, lungs conjested and pressed upon with a pressure of 100 pounds to the square inch, breathing 60 times to the minute, you are afraid to take a pint of blood from him for fear he dies from exhaustion, and you chuck him full of quinine, iron, brandy and milk to support him, and morphia to relieve his pain; and your man dies and you console yourself by the reflection that you gave him the best chance for his life by using the latest and best treatment approved by the profession.

I have, in a continuous practice of over 35 years met with some cases of pneumonia, and I never had a case of primary inflammation of the lung in the adult but I bled freely in the congestive stage, and although I say it myself, it was very rarely that they did not recover rapidly after one or two decided venesections.

I had an attack myself in the spring of 1858 of acute pneumonia of the left lung. I was bled twice from the arm, cupped and blistered, and I made a speedy

and good recovery. I can remember what a load was taken off my chest at the first bleeding; how the pain ceased; and how easily I breathed; and with a full dose of morphia how well I slept that night. In the last few years, since bleeding as a remedy has been abandoned, nearly all the cases I have seen have been in consultation with other physicians, and the great majority of them were very bad subjects, men who were broken down by strong drink. I saw them in the advanced stage, when the time for bleeding had gone by, if at all admissable in such subjects—seven in number. They all died promptly, full of morphine, quinine, iron, brandy and milk.

Dr. John L. Atlee, our retiring president, in his address to the members of the American Medical Association, at Cleveland, June 5, last, said: "I feel well assured that the almost total disuse of the lance has cost *many valuable lives*. From a very large experience in its use I am satisfied, *fully satisfied*, that if we depended more on the early use of the lance, in the congestive and inflammatory states of many diseases our practice would be made more successful than it now is. It is, in my opinion, a very important subject, and I feel assured that ere long the lancet will be more freely used than it is now." When I heard these words fall from his venerable lips, an old veteran in the profession, brim full of knowledge and wisdom gathered from scientific researches and an experience of 60 years of active practice in the profession, although not a Methodist, I could scarcely restrain myself from shouting Amen!

Dr. Davis, of Chicago, says there was during the year 1882, as per the census of 1880, one death in the city of Boston to every 532 of the population; 1 to every 579 in Chicago; 1 to every 441 in San Francisco; 1 to every 1,088 in New Orleans. He says sanitarians should investigate the cause, and suggest some means of checking this fearful mortality. Certainly this is good advice, and upon the principle that "an ounce of prevention is worth a pound of cure," it is well-timed. But I say to you, fellow practitioners, clean up your old rusty lancet, and you that have none buy one; carry it with you to the bedside of the sick, and when you meet an enemy so formidable as eclampsia or pneumonia, stand in the advance guard, strike with your lance one or two decisive blows in the onset of the conflict, and it will do more toward subduing the enemy than all the stimulating nourishing treatment of the present day. "Quit yourselves like men."

MEDICAL PROGRESS.

THE PHYSIOLOGICAL EFFECTS OF COFFEE.—DR. J. A. FOOT, of Rio de Janiero. (*Bull. Gen. de Therap.* June 30.) Dr. Foot gives us the effects of a strong dose of coffee upon his own person after recording his condition for fifteen days of total abstinence from coffee, and follows his record of the effects of the strong dose, by noting the influence of two cups of coffee daily for twenty-five days. The most interesting part of his paper is his record of the effects of the strong dose. At the time of taking it, his pulse was seventy-two in the morning, reaching eighty-four during the day. He made an infusion of over ℥viij of coffee in a quart of boiling water, drinking the whole of it during the day from 7 A. M. to 9 P. M. During that day the pulse increased in rapidity to 108 in the afternoon, in the evening it reached 114. He went to bed at 11 P. M., but could not sleep, reflex contractions were produced in nearly every part of the body alternately. Very painful cramps in the thighs, legs, feet, walls of the thorax and in the muscles of the hyoid region. These cramps persisted throughout the night, but moderated in severity on the following morning. The tongue was dry and there was a certain degree of constriction in the chest. At the same time there were frequent cramps in the stomach accompanied with nausea. The intestines were the seat of frequent borborygmus, and of an abundant liquid secretion which produced eighteen evacuations. The pulse kept between 110 and 112 through the night. It was intermittent, as was the heart's action, losing one pulsation to every four. The next day the pulse was seventy-six, there was headach and no appetite.

In this experiment, then, the coffee acted on the organs and functions of the central cerebro-spinal system, producing insomnia by exciting the brain, producing the cramps in the muscles, pains in the stomach, disturbance of the intestine and of the heart by exciting the spinal cord, an excitation of the reflex force or excito-motor. He considers that this irritation affects equally the spinal roots of the sympathetic, and in paralyzing the vaso-motor nerves. In this way explanation is given of the cause of the excessive secretion from the intestine and of the abolition of sexual power.

His other experiments with moderate doses, prove to his satisfaction, that the use of coffee does not prevent advanced age and the preservation of good health; and that life seems to be prolonged in the countries where coffee is much used.

AMAUROSIS FROM TUMOR IN THE NASAL CAVITY CURED BY REMOVAL OF THE TUMOR. PRIESTLY SMITH. (*Ophthalmic Review*, June, 1883.)—The salient points in the case detailed are that a morbid growth in the nasal cavity caused impairment of sight in both eyes, unaccompanied for a long while by any visible changes in the optic disks, and that the removal of the growth was followed by complete and permanent restoration of sight in one eye. There can be little doubt that the tumor was a non-malignant growth of some kind, as it was completely removed, and there was no recurrence at the end of six years. The seat of the pressure is inferred from the symptoms to have been in front of the optic commissure—for there was no hemiopia, one eye being blinded completely and the other recovered with an entire visual field. It was not within the orbital cavities, for there was no protopsis and no sign of pressure upon the nerves or blood-vessels which enter the orbit in the neighborhood of the optic nerve. There must have been an invasion of the sphenoid cells by the tumor with a destruction of the septum,

so as to exercise pressure upon both the optic nerves in the optic foramina without affecting an entrance either into the orbits or the cranial cavity.

EXPERIMENTAL RESEARCHES UPON THE STRUCTURE OF THE OLFACTORY MEMBRANE. *Christmas, Direkinck. Holmfeld.* (*Nordiskt Mediciniskt Arkiv. Bd. XV., No. 7. Comptes-Rendus*).—The section and destruction of the olfactory bulbs causes a destruction of the olfactory cells in the olfactory mucus membrane, whilst the epithelial cells are either not affected, or only after several months. The modification of the olfactory cells consists in a fatty degeneration and a decomposition into molecular granules. This process is more rapid in the warm than in the cold-blooded animals, the changes appearing in the first at the end of fifteen days. In about a month the protoplasm of the cell is filled with fat granules. In four or five months the epithelial cells commence also to degenerate, probably because their function, which is dependent upon the olfactory cells, has been arrested. In the cold-blooded animals the process of degeneration begins at the end of a month, and it is during the second month that the degeneration becomes complete, with no change in the epithelial cells. This would establish the facts :

1. That the olfactory cells should be regarded as the true termination of the olfactory nerves.

2. That the epithelial cells cannot be in direct communication with the olfactory nerves.

3. That the definition given by Max Schultz of the organization of the olfactory membrane is correct, and that the observations of M. Exner are incorrect.

COMPLETE PROGRESSIVE HEMIATROPHY. S. E. HENSHEN, *Nordiskt Mediciniskt Archiv., Bd. XV, No. 7 Comtes-rendus*). The patient was 46 years of age. No nervous affection in the family, with the exception of a cousin who suffered from melancholia. Enjoyed good health up to 14 years, then suffered from a slight sprain of the left foot, followed soon after by erysipelas of the left leg, which was followed in turn by ulcers upon the legs that healed at intervals. Since that time he suffered from pricking and shooting pains in the left half of the body. Six months later, modifications in the extremities and trunk were noted, and six months later still the face was affected. From that time onwards these modifications have become more and more marked. At that period he suffered from very painful headaches. At 19 years of age he was affected with melancholia for a time, after which he enjoyed perfect health. Too years and a half later the melancholia returned. Married at 40. He became the father of a healthy and well-made child.

He has strong limbs and an excellent embonpoint, The left side of the face is sensibly depressed, and as if diminished in size. The cranium above the eyebrows is well formed and symmetrical, with the exception that the left temporal fossa is deeper than the right. Below the eye-brows the face has a marked want of symmetry, the left side being very visibly smaller than the right. The nose looks as if it were pressed upon from the left, the left cheek is deeply sunken, deprived of fat and marked by radiating wrinkles; the eye is deeply sunken, but sound in other respects. The eyelids have no fat. The left zygoma is atrophied. The skin of the left side is very thin and pigmented. The left superior and inferior maxillæ are markedly atrophied. The teeth have dropped out. The alveolar process of the left superior maxillary is wanting behind the second buccal tooth. The raphe of the palate inclines to the left; the soft palate is partially atrophied on the left. The whole of the right side of the face is healthy, with an abundance of fat.

The neck is symmetrical; the whole of the left side of the neck is a little smaller than the right, but there are three portions which are markedly atrophied—first, between the fifth and seventh intercostal spaces; second, in the umbilical region, between the tenth and eleventh dorsal vertebræ; and third, at the crest of the left iliac bone, including the left natis and extending through a line drawn from the superior anterior spine of the ilium and the trochanter. Over all these parts the skin is as thin as paper, markedly pigmented, and the subcutaneous fat so nearly absent that the atrophied muscle fibers are clearly defined, and there is a consequent depression of the parts. The left arm is atrophied throughout, and shorter than the right, the muscles very much atrophied, particularly the long head of the triceps, which has almost entirely disappeared and is replaced by a tendon of a few millimeters in thickness. The elbow joint and the fingers of the left hand cannot be completely extended, on account of the changes which the articulations have undergone. The right arm is strong and muscular, with an abundance of fatty tissue. The left leg has lost nearly all of its adipose tissue; the leg cannot be extended at the knee, in consequence of changes at the joint; the muscles are greatly atrophied, especially the quadriceps, in which are two ossifications. The whole inferior portion of the leg forms a cylinder of a nearly uniform thickness, giving a circumference of 19.5 to 16.5 cm., in comparison with the right leg of 38 to 24 cm. The muscles have nearly disappeared, and over the bones the parchment-like skin is closely adherent in part, of an ivory whiteness and in part pigmented. The skin is wanting in hair and sudoriporous glands. Anchylosis of the tibio-tarsal articulation.

Tactile sensibility has undergone no change. The left leg is more sensible to cold and to electric irritation. The patient suffers in the parts attacked from frequent fibrillary spasms, contractions, etc. There is nothing remarkable about the internal organs.

TREATMENT BY ARSENIC OF LEUCÆMIA, PSEUDO-LEUCÆMIA AND OF PROGRESSIVE PERNICIOUS ANÆMIA, ETC. F. W. WARRINGE. (*Mordiskt Mediciniskt Archiv. Bd. XIV., No. 7, Comptes rendus*).—During the four years that the hospital of Sabbatsberg, at Stockholm, has been open, two cases of leucæmia, seven cases of pseudo-leucæmia and seven cases of anæmia have been treated with arsenic

by Warringe with favorable results. After giving the comparative details in each case, which we omit here, the writer considers them as of a common origin, and passes in review the principal symptoms and the alterations in their pathological anatomy, dwelling principally upon the modifications in in the blood. Whilst these cases present quite marked differences in the quality of the blood, they present a characteristic in common in the diminution, in number of the red globules, which is due to an abnormal destruction. He sees in this modification of the blood the primary alteration, regarding as secondary alterations by dycrasic irritation, as much the modification of the cord, as the hypertrophy of the lymphatic glands and spleen, and the lymphatic heterotopic neoplasms.

As to the alteration in the cord, so well recognized in the leucæmia, the writer has found it in all the cases of pseudo-leucæmia and pernicious anæmia where an autopsy has been held, and he considers it as common to the three affections. They have also in common the anæmia with the cachexia, the disposition to hæmorrhages, particularly of the retina, to œdema and to transudations, as well as to fatty degenerations of the different organs, particularly the heart. These diseases are identical in their onset, their progression and their mortal termination, if proper treatment does not intervene. They possess in common a marked tendency to relapses. Moreover, they are all three equally free from any appreciable cause. In this respect the author observes that they sometimes run an acute course, and that then they bear certain resemblances to acute infectious diseases; that when they are more chronic their onset and course are often of a nature to reach also infectious diseases. It is probable then, he says, that we have to deal with specific infectious diseases, or rather with *a disease* of that character, presenting itself under different forms.

On the Use of Powdered Beef's Blood in Alimentation.—Blood exercises a stimulating action upon the digestive organs and upon the whole organism. This may be due to its extractive matters, to its salts, or to the iron which it contains. It is generally considered to be difficult of digestion; but this may be due to the fatty substances which are so commonly taken with it. Dr. Guerder has administered his preparation to 51 persons; 44 continued its use for several weeks without suffering any inconvenience; 3 vomited it immediately, and 4 digested it with difficulty, suffering from a sense of weight in the stomach, from eructations, and some hours later discharged it undigested. The 3 were convalescents from typhoid fever; the 4 were chlorotic. The taste of the blood, without being positively disagreeable, is unpleasant to many persons, and can be disguised by the addition of aromatic powders to suit the individual. It does not do to give more than a certain quantity. The writer gives, three times daily, to children, 7 to 8 grammes; to adults, 20 to 25 grammes. These doses are generally well tolerated and suffice for a rapid reconstitution of the organism. Seventy to 75 grammes of the powder are equivalent to 500 grammes of fresh blood.

The preparation of the powder of blood requires great care. Dr. Guerder employs only the blood of the beef, for the blood of the sheep gives a disagreeable odor. The blood is taken very fresh, difibrinated, evaporated 4 to 5 hours, and dried slowly in a current of warm air at a temperature of 40 to 42° C.? (104 to 113° F.) The preparation takes a long time, at least three days, and can be done quicker by compressing the pasty mass of evaporated blood in linen, but then the risk is run of removing the soluble portions which contain principally the saline matters—the presence of which play an important part in the dissolution and digestion of albuminous substances. The dried blood now presents itself in a lumpy form, and is reduced to a powder by means of the pestle. It is then again placed on the stove to remove every trace of humidity. It may be questioned if the pulverizing by means of the pestle may not act upon the albuminoid matters of the blood so as to diminish their solubility, but the powder produced dissolves more readily than the mass, and there seems to be no difference in their digestibility. The blood powder may be given at meal time, and, by preference, in some cold liquid, as water, wine, milk, or black coffee. To children it may be given in syrup. Heat develops its peculiar taste and renders it more difficult of absorption.—Dr. Guerder, *Bull. Gen de Therapeutique*, May 30, 1883.

The Toxic Properties of Nitro-Glycerine and of Dynamite. Dr. Brown. (*Bull. Gen. de Therapeutique*, May 30, 1883.)—Prof. Brown in 1877 was physician to a foundry where cannon were made, and hearing the officers of artillery complain of the violent headaches which resulted from the handling of dynamite, resolved to make certain experiments upon himself.

1st. He kept the contents of a cartridge, 100 grammes, upon his work-table for several days, agitating them constantly with a paper-cutter. No effect, showing an absence of all danger of absorption in the form of vapor or fine dust.

2nd. He kneaded a small pinch of dynamite in the hollow of his hand for five minutes. Almost immediately he felt a slight painful numbness along the radial nerve from the base of the thumb to the middle portion of the forearm. Two hours later, tension over the forehead and maxillary tissues, with a ringing in the head, like the commencement of a coryza.

3rd. He rolled a pinch of dynamite between the thumb and index-finger for a quarter of an hour. A half hour later there was painful sense of tension in the sinus of the nasal fossæ and in the forehead. All day, this being tried at 8:30 A. M., there was a feeling of slight headache. At 4 P. M., on going out into the air, this passed off.

4th. For a quarter of an hour rubbing with force in the palm of the hand a small quantity of dynamite. In ten minutes strong tension in the temporal and parietal regions; pain in the forehead; heat of face; painful arterial pulsation in the neck and at the temples; slight nausea; slight giddiness. This

was tried at 2:30 P. M., and some of the symptoms persisted until bedtime.

5th. At 2:30 P. M. placed a piece of dynamite on the tip of the tongue, of the size of a small lentil. At first the taste was sweet, then agreeably acid, and finally burning. He then spit it out, having taken care not to swallow, and got up to wash out the mouth with water, when he was taken with a vertigo which obliged him to hold on to the furniture. The occiput was the seat of a heavy pain; the skull seemed to dilate until it would split open; the heart beat violently and rapidly; the arteries of the neck and temples were distended and beat with excessive violence. There was anxious respiration and slight nausea. He was obliged to make an effort to analyze his sensations and transcribe them. No disorder of urine.

In five minutes cephalic and cervical tension diminished. Pulse 80 and irregular. In a half hour no symptoms other than the cephalic; in an hour nausea on walking, frontal cephalgia, weakness, fatigue and constant yawning. That evening he dined out in company, drank several glasses of different kinds of wine and a cup of coffee, which seemed to remove all the symptoms. The next day he felt a disturbance in the head, and the need of quiet, rest and sleep.

PALATABLE DRUGS FOR CHILDREN.—Dr. Frederick Churchill has an article on this subject in the *British Medical Journal*, for June, 1883, a consideration of which, although the matter in itself is not new, may be of use in reminding us that we can make medicine agreeable, and despoil our homœopathic neighbors of some of their success. Thus, as the ailments under which children for the most part suffer are due to over-feeding and to neglect of the calls of nature, in treating habitual torpidity of the bowels the best method is not medicine, but an enema of soap and water, with occasionally a little castor or olive oil added to the injection. This failing, we fall back upon castor oil, administered internally. Fortunately, we are enabled to give it absolutely free from taste or smell, while it retains its full aperient properties. Shaken up with three or four times its bulk of hot milk, the viscidity of the oil is avoided, and the emulsion produced is scarcely distinguishable from warm rich milk. In giving a compound rhubarb pill, an ordinary five grain pill can be cut up and broken into pieces, which are buried in a chocolate cream. The medicated fruit lozenges are very useful, as tamarindien, which probably contains podophyllin, and of which only a small portion must be given to a child. The compound liquorice powder, containing senna powder, may be given by the teaspoonful, stirred up with warm milk at bed-time, and a little chloric ether added (10 to 20 drops). Fluid magnesia or calcined magnesia, flavored with syrup of orange, is generally acceptable. Rhubarb mixed with bicarbonate of soda, each five grains, is easily given in jam or honey. Decoction of aloes rubbed on the stomach of an infant, will sometimes suffice to procure an action of the bowels; in giving it internally, the extract of liquorice will mask its bitter taste. This bitter is not objectionable to children, for Dr. Churchill notes that they sometimes lick off the aloes from their fingers, when put on to prevent them from sucking them. Powdered aloes, about half a teaspoonful may be given, mixed with brown sugar. The electuary of senna is taken without difficulty; also the syrup of senna, and the infusion with prunes. The effervescing purgative lemonade is a very agreeable drink, as also half a seidlitz powder flavored with lemon juice.

The febrifuges are generally pleasant to take, and the aromatic syrups form agreeable adjuncts. Cough mixtures are made pleasant by the addition of syrup of squills, and of tolu. In tonics the bitter flavor must be disguised. The saccharated carbonate of iron and steel wine are taken very well. Quinine is well disguised in syrup of orange.

THE USE OF AMMONIATED CHLOROFORM. (*Lancet*, June 9, 1883.)—Dr. B. W. Richardson successfully used as far back as 1853 a combination of the vapors of chloroform and of ammonia in the so-called phagædenic croup where there was a refusal to swallow medicinal doses of ammonia; he produced a gentle narcotism with the combined vapors, and was then able to increase the quantity of ammonia considerably. He kept up the inhalation for fourteen hours, administering food by enemeta. In studying a theory that zymotic diseases ought to be controlled by inhalation, he found that each of these vapors in its separate state was a remarkable antiseptic, and that the two acted admirably in combination. Now he uses this combination in zymotic fevers, and it seems to promise valuable results. He takes an alcoholic solution of ammonia (838 alcohol saturated with ammonia) and mixes it in equal parts with chloroform or methylene bichloride; any separation of water is removed. Two fluid drachms are put into a small Wolff's bottle, which is connected with a leather inhaler armed with an expiratory valve. In a puerperal case free inhalations were used every two hours for three days without the slightest discomfort and with obvious direct advantage. The effects of the inhalation seem to extend in four directions: First, under the sedative action of the narcotic relief from pain is obtained, and repose, if not actual sleep, is secured. Second, under the combined influence of the vapors there is reduction of temperature Third, under the influence of the ammonia there is a sustained fluidity of the blood and a production of freedom of secretion. Fourth, under the action of the combined vapors there is an antiseptic result which is always favorable.

ORCHITIS, WITH SLOUGH OF A PORTION OF THE TESTICLE, FOLLOWING TYPHOID FEVER.—Mr. C. E. Harrison, *Lancet*, June 9, 1883, describes a case of this rare sequela of yellow fever, coming on seven weeks after the onset of the fever, where the slough reached the size of an almond, separated, and the wound healed completely.

DEATH FROM AIR IN THE VEINS AFTER PARTURITION. (*Lancet*, June 9, 1883.)—Hindo woman admitted to Kaira Gaol Hospital, under the care of Surgeon Davidson, Indian medical service; natural

labor, female child, head presentation, placenta came away at usual time; no post partum hæmorrhage. About three-quarters of an hour arterwards the woman died, without any ostensible cause; no hæmorrhage, no convulsions. She had been taking some nourishment, when she suddenly fell back and died. Post-mortem two hours after death; uterus empty, with large and somewhat distended veins; right side of heart contained a quantity of air mixed and churned up with blood, and which escaped in bubbles; lungs congested; all the other organs were normal.

MILK IN THE MALE BREAST. C. H. VON KLEIN, A.M., M.D. (*Cincinnati Lancet and Clinic*, June 30.)—There have been several articles in the medical press recently giving cases of the secretion of milk in the breasts of the virgin and other females where pregnancy did not precede it. Dr. Von Klein adds his quota by giving two cases where milk was secreted in the male breast. The first was in a man aged 41, fine physique, height 5 feet eight inches, weight 190 pounds, suffering from hydrocele. The flow of milk was induced from attempts to quiet a restless infant by introducing the nipple into its mouth. After several weeks had elapsed the breast became larger and harder, and the milk began to flow in sufficient quantity to nourish the child, and this was kept up for five months, when it was stopped from the intense pain felt in the testicles—a crawling sensation. The testicles eventually atrophied and disappeared entirely, the patient enjoying good health, meanwhile having been cured of his hydrocele by an operation.

The second case was one simply of observation of a Russian peasant nursing a child, and occurred during the Turco-Russian war, with no special details.

THE COLLECTIVE INVESTIGATION MOVEMENT.—The *British Medical Journal*, for July 7, devotes an editorial to this subject, in which it congratulates itself that the work has already been taken up by the medical profession in Germany and in America. At a meeting of a leading Berlin medical society (Verein fur Innere Medizin), held on May 21, the President, Professor Leyden, submitted a report drawn up by Dr. Frantzel and himself upon the subject of a collective investigation, and suggested that an inquiry should be instituted concerning phthisis, of a very elaborate and exhaustive nature, including its hereditary transmission, the sanitary and other conditions under which it occurs, its connection with disease in the lower animals, its contagiousness, its curability, and its relation, if any, to acute pneumonia. In commenting on this, the editor gives as the chief aim of the collective investigation, as applied to the main body of the profession, the collecting of simple, every day facts, that can be easily observed and recorded, and which are of value only from their number, and not from the importance of individual observations. The questions suggested for the profession in Germany are of a more intricate and difficult character, so that the value of each observation must be judged by the skill of the observer. The movement in this country, as brought forward by Dr. Billings in the Association, is evidently looked upon with much interest. In Great Britain a wide area is already covered, not only in the British Isles, but in Australia, in India, in Jamaica, in Egypt, and in all parts where the British army and navy medical officer is sent. Among those officers alone are over 400 observers. In Australia there are 240 members.

A TUMOR OF HAIR REMOVED FROM THE STOMACH OF A YOUNG GIRL BY GASTROTOMY.—Von Schönbom. (*Pester Med. Chir. Presse*, 1883.)—A fifteen-year-old somewhat anæmic and nervous girl, who since her tenth year had suffered considerably from chlorotic troubles, which for the last three years were associated with acute indigestion; for the last year and a half an extremely movable tumor was noticed in the abdominal cavity, which was by some taken for a movable kidney, notwithstanding the fact that some of the symptoms were not in accord with the diagnosis. The pains finally became so severe that laparotomy was performed, when the tumor in the stomach was found to be made up of short hairs, mixed with vegetable cells, starch grains, etc. It weighed 283 grm., and was 13½ ctm. long, 10½ ctm. broad, and 5½ ctm. thick. The tumor was compact, and superficially very black. The result of the operation was complete relief. The patient acknowledged that for the past four years she had been in the habit of biting off the end of her hairs and swallowing them. The majority of her schoolmates did the same, believing it would give them clear voices. The reporter finds seven similar cases in the literature of the subject, and one case where a malignant tumor of the stomach and intestines proceeded from this cause.

ON THE TREATMENT OF SPINAL CURVATURE BY RECLINATION IN ITS EARLY STAGES.—Mr. Edward Lund, F.R.C.S., Professor of Surgery in the Owen's College, Victoria University, Manchester, writes:

"I hope to exhibit, at the forthcoming meeting of the British Medical Association at Liverpool, a form of couch for the treatment, by reclination, of spinal curvature in its early stage, and weakness of the muscles of the spine, which embodies in its action a principle of treatment for such cases too frequently overlooked.

"The couch which I have to recommend, and which will be shown at Liverpool, is designed to carry out by reclination the same principle of treatment as operates in the method of vertical suspension, only in a more gradual and prolonged manner. I have called my couch the 'slippery couch,' and I think the construction and mode of action will justify the term. I have used it with marked benefit during the last few years, in more than thirty cases, in private practice. It is made in this way: A piece of wood is prepared, of suitable thickness, and about six feet long and eighteen inches wide. At about four inches from one end, a hole is cut through the wood, of circular form and six inches in diameter, with its margin on one surface of the wood slightly bevelled inwards. This end of the surface of the wood is to be the upper or higher part, when it is fixed at such an inclination by means of a block or cross-piece as to raise it about one foot at the higher end. It is

well to have four wooden legs screwed on, one at each corner, the upper pair being longer than the lower in the same proportion; and to still further influence the angle at which the couch is to be used, by means of extra screw holes in the wood; the longer pair of legs being brought nearer to the foot of the couch, a greater elevation can be secured. The flat piece of wood being so prepared, is covered with several folds of soft thick blanket to about two inches in thickness, the blanket being just the size of the wood, on one surface only; over this a piece of well polished black horse-hair cloth is stretched, and being turned tightly over the edges of the board, is nailed underneath, so as to produce a smooth, somewhat soft, but yet slippery, almost polished surface. Where the blanket crosses over the hole already described, it must be cut across in two directions, longitudinally and transversely, and the horse-hair cloth should be left loose over the same spot, so that, if pressure be here applied, an indentation will be quickly made.

"Now, if a couch be prepared in this way, and placed at such an angle of elevation as I have here described, about one part in six of its length, a person lying upon it on his back will soon find, unless he make some effort to resist, that he will quietly slide down toward the lower end of the couch; and if his attention is otherwise absorbed, he will have his feet over the end of the board, as he is sliding beyond it. By a very simple device this tendency to slide or slip downwards may be very beneficially utilized for the object we have in view.

"A small, firm, cylindrical pillow is prepared, about the diameter of the wrist, and a foot in length, and this is attached by strong tapes, one at each end of the pillow, and fixed to each upper corner of the couch, the length of the tapes being such as to place the pillow transversely on the board immediately below the lower edge of the hole in the wood. With this pillow in position, and the patient so placed that the pillow may be received into the recess of the nape of the neck, the projection of the occiput falling into the depression made by the hole in the wood, the body is retained in position, and the sliding down is prevented, but yet there is a constant gentle dragging action on the spinal joints from the weight of the pelvis and lower limbs, which will act most favorable in the required direction.

"It is desirable, when a patient uses this couch for the first time, that he should try it without the pillow; and, if needful, the elevation of the couch should be adjusted until the peculiar sliding movement is experienced. Then, with the help of the pillow, and the back of the head falling into the recess prepared for it, the patient will be aware of the principle upon which the couch is intended to act, and be more likely to continue its use.

"All other couches, such as the Ilkley couch, and couches with a double angular bend to support the knees, or with a foot-piece against which the feet can rest, are entirely opposed in principle to the plan of this 'slippery couch.' Using them, the patient may feel rested and experience some temporary relief; but I know of no way, by reclination, to secure a certain degree of spinal extension, better than to fix the upper segment of the vertebro-cranial axis at one spot, and allow the weight of the lower part to induce direct 'self-extension.'"—*British Medical Jonrnal.*

THE RISKS OF "MASSAGE."—Dr. Julius Althaus, M.D., Senior Physician to the Hospital for Epilepsy and Paralysis, Regent's Park, deprecates the abuse of massage, a practice often now employed where it can be of no service. "It is well known that at various times epilepsy, idiocy, and some forms of insanity, have been treated by massage and gymnastics; but, fortunately, we now hear very little of such therapeutical aberrations.

"It appears to me that diseases of the brain and spinal cord must, on account of the anatomical situation of these organs, be inaccessible to the influence of massage, which can only be applicable to more superficial parts of the body. Apart from this, however, it is important to consider that many of the most important diseases of these organs are of an inflammatory or irritant character, either primarily or secondarily; and this should make it self-evident that massage should not be used for their treatment, even if the suffering parts could be reached by it. I will here only allude to many forms of cerebral paralysis from hæmorrhage, embolism, and thrombosis, which are followed by sclerosing myelitis of the pyramidal strands; and most forms of primary lateral, posterior, or insular sclerosis of the spinal cord.

That which may be good for developing and strengthening healthy muscles, or muscles which have been enfeebled by disuse or certain local morbid conditions, etc., is not for that reason suitable for the treatment of muscular paralysis owing to central disease. In most cases of lateral and insular sclerosis, which are, unfortunately, now much treated with massage and exercises, rest is indicated rather than active exertion; and overstraining of the enfeebled muscles acts prejudicially on the state of the nervous centers. I have recently seen quite a number of instances in which the central disease had been rendered palpably worse by procedures of this kind; and, in a case of cerebral paralysis which was some time ago under my care, the patient had, after four such sittings, been seized with collapse, which nearly carried him off."—*British Medical Journal.*

THE INFLUENCE OF CALOMEL ON DIGESTION.—Dr. Vassilieff has found, from experiment, that the presence of calomel, at least up to the amount of five grammes, in the alimentary canal, does not interfere with the gastric juice, nor affect the triple influence of the pancreatic fluid on albumen, fat, and starch. Calomel prevents all other changes in nutritious substances, save those produced entirely by the digestive secretions, decomposition and retrogressive processes in albumens being entirely checked. Calomel also prevents butyric acid fermentation, as Vassilieff found by experiments on cheese. The action of calomel readily explains the cause of the green color of feces passed by patients to whom that drug has been administered. Hoppe Sezler rightly attributed this coloration to the presence of unaltered bile. These researches are described at length by Dr. Vassilieff in the *Zeitschrift fur Physiologische Chemie*, vol. vi., page

112. He has found that this drug prevents the development of micro-organisms in the digestive fluids, and also destroys any bacteria and micrococci already developed.—*British Medical Journal, July* 7.

ACUTE GOITRE.—Surgeon Major Gore, *Edinburgh Medical Journal*, records thirty cases of cure of this disease among the soldiers of a native Indian regiment, by biniodide of mercury, rubbed in for ten minutes or more, as the patient sat with the enlarged gland exposed to the sun or a strong fire. In some of the cases the swelling had been observed for about ten days before treatment. Only one case was any length of time in hospital, viz.: 79 days; an anæmic man, aged 22. The average duration of the treatment was 22.6 days.

DRAINAGE OF THE UTERUS.—Dr. Schwartz considers that the uterus, when affected by a catarrh of the mucous membrane, is in a condition to produce collections of purulent material, the ready relief of which depends upon the rapidity and facility of its discharge. For the past three years he has attempted to establish a perfect drainage in uterine affections, at first employing rubber tubes, but without much benefit; he then used tubes of twisted glass, obtaining a freer and more fluid discharge, but it was always bloody. This was due partly to the thickness of the tube, and partly to a knot made at its inferior portion. Finally he used fine bundles of glass threads, perfectly smooth, with success. He begins his treatment with a very small drain, to determine the degree of uterine irritability, then increases its size as occasion demands, using a drain six to seven centimetres long. At its superior is a small knot, or it is simply curved to retain it in place—the lower portion is secured by a thread, so that the patient herself can remove it. The tube is introduced by means of a sound, after being covered with a fine layer of iodoform. The length of treatment depends upon the characteristics of the cervix and the results obtained. For mechanical dysmenorrhœa and endometritis, the drain remains for months, being changed every three or four weeks. In amenorrhœa, or insufficient menstruation, the drain is introduced a few days before the catamenial period and removed a few days subsequent to it. Dr. Schwartz has found this method very useful in the catarrh consequent upon an incomplete retrocession of the uterus after a normal labor, or after abortion, the secretion generally increasing a little, becoming more fluid and disappearing after a few weeks. When the uterus does not return to its normal state it becomes much smaller and firmer. The treatment is painless, with the exception of slight colics.—SCHWARTZ. *Centralblatt fur Gynækologie*, March 31, 1883.

MISCELLANEOUS ITEMS.

Professor Virchow has been so much criticised by the Congress of German Physicians, for allowing a testimonial by him of a recent remedy to be published, that he has withdrawn from the Society. The proprietor of the pilulæ helveticæ sent specimens to Professor Virchow requesting him to try them. He was in need of something of the kind himself and accordingly gave them a trial. The result proved so satisfactory, that he wrote a note to the manufacturer stating the fact, but giving no permission to print it. Without authority from Professor Virchow, however, the letter was printed and very widely distributed. Virchow felt that under the circumstances, the remonstrances of the Congress were unwarranted, and consequently withdrew from it.

THE newly organized Medical Department of the University of Colorado, proposes to maintain a four years course of nine months each. This is a most excellent requirement, and we hope the University will fully maintain it. Another provision of the College we can not as heartily commend. The instruction is to be free and open to persons of either sex. Education of any kind beyond that of the common schools should not be free. A person who is unable to pay his own way while getting an education has not got life, energy and intellect sufficient to make him deserving of a broad, liberal education or worthy of a position in the ranks of professional men. The co-education of the sexes in medicine has not proved successful elsewhere in this country, and it is doubtful whether it will be possible to maintain it in Colorado without difficulty.

WE noted sometime since, that the Professorship of Hygiene, in the John Hopkins' University, had been offered to Dr. John S. Billings, but, as was then suggested as probable, he has declined the offer, as according to the regulations of the army he could not retain his position in it and continue his work in the library of the Surgeon General's office, and at the same time hold a professorship in any college. Although not occupying the professorship, it is not improbable that he will lecture at least during the coming winter on that subject at the University.

A PRIZE of 5,000 francs has been announced for international competition, to be known as the Bufalini Prize. It is established according to the wishes of the late Bufalini, Minister of Public Instruction in Italy. The subject for 1883-4 is the "Application of the Experimental Methods to Science." The essays must be presented to the Secretary of the Medical Faculty of Florence before October, 1884.

THE Riberi prize of 20,000 lire has been awarded by the Royal Academy of Medicine, at Turin, to Prof. Giulio Bizzozero, for the best essay on physiopathology of the blood.

DR. LEOPOLD has become director of the Maternity hospital in Dresden, a position made vacant by the removel of Dr. Winckel to Munich.

THE American Association for the Advancement of Science is now holding its meetings at Minneapolis, beginning August 14.

PROF. C. WEDL has been made rector of the University of Vienna for 1883 and 1884.

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THE EDITOR of this JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information, should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, AUGUST 18, 1883.

TRI-STATE MEDICAL SOCIETY.—In regard to this Society we have received the following card from the officers, which will interest many of our readers in three States. We hope those interested will have a good and profitable meeting, and send us for publication all the good papers and reports that may be read. They can find no better medium for reaching the profession in all parts of the country.

The Tri-State Medical Society will meet in English's Hall, at Indianapolis, on the 18th, 19th, and 20th of September, 1883, commencing at 9 A.M. Excursion rates have been secured on the following railroads; C., C., C. & I.; Cincinnati, Indianapolis, St. Louis & Chicago; Cincinnati, Wabash & Michigan; Indianapolis & St. Louis; I., B. & W.; Wabash, St. Louis & Pacific; Indianapolis & Vincennes; J. M. & I.; Pittsburg, Cincinnati & St. Louis; Vandalia, Evansville & Terre Haute; Ft. Wayne, Cincinnati & Louisville.

Hotel Accommodations—The New Denison, Grand, Bates and Brunswick have reduced their rates for the occasion, and everything promises a very large attendance. Many papers of great interest will be presented. For further particulars address Thos. B. Harvey, M.D., Indianapolis, Chairman of Committee of Arrangements.

G. W. BURTON, M.D., *Secretary*,
WM. PORTER, M.D., *President*, Mitchell, Ind.
St. Louis, Mo.

A SAFE ANÆSTHETIC.—We find the following paragraph in the newspapers. It is very doubtful, however, whether any agent that is capable of producing complete anæsthesia can be considered safe in all persons who may be in apparent health:

"Dr. W. K. Mayo, a Boston dentist, is said to have discovered a new anæsthetic devoid of the serious defects of those in common use. Its inbreathing is agreeable and safe. It produces absolute insensibility to pain, long enough to permit the most delicate operations, preserves the pulse at its normal condition (a little higher than usual, perhaps), and admits of immediate recovery from its influence without any sense of nausea or dizziness."

CHOLERA.—Although official reports concerning the progress of cholera in Egypt are no longer made, and consequently we have no means of knowing accurately the number of deaths in the places of its prevalence, yet the indications are that the epidemic is slowly subsiding, and Western Europe remains up to last advices free from the disease. In the meantime, there are no evidences that bowel affections have been more prevalent or fatal in our principal cities during the month just past than the usual average. It is the part of highest wisdom, however, for all parties, including both governments and people, to use all reasonable precautions against the introduction of infectious diseases from without, and still more to remove all internal sources of filth and impurity of soil, water, or air, that are capable of removal. Such a course will always pay, in lessening the suffering and mortality from ordinary diseases, if no extraordinary epidemics were threatening an invasion.

YELLOW FEVER.—This scourge continues to extend its prevalence in its native territory, the West Indies, and to come in infected vessels to several of our Gulf and South Atlantic ports. Thus far, however, it has not succeeded in getting beyond the quarantine stations; and unless the atmospheric temperature should be unusually high during the next six weeks, there is a strong probability that our country will escape any considerable prevalence of the disease the present season.

CORRESPONDENTS.—In the absence of mature arrangements for regular correspondence from our chief cities and medical centers, we have thought best to publish such letters as we have been favored with, especially when they contained some criticisms on our own work in connection with THE JOURNAL. It was on that principle that we admitted the letter in relation to advertisements, though objectionably personal in regard to one of the best drug manufacturing houses in the country. Also the letter of Dr. Fite

in this number, which is certainly written in a vein of intolerence of opinion regarding questions of great importance, which are not only still on trial on both sides of the Atlantic, but concerning the value of which the wisest and most learned of past generations have differed as widely as those of the present. We will be pleased to receive communications from any and all sources, and will endeavor to treat all honestly expressed opinions on topics of interest to the profession with liberality; but we earnestly request all writers to cultivate the habit of treating the views of others with the same respect as they would ask for their own.

THE CONVENTION OF MICROSCOPISTS. — In this number we complete an interesting account of the proceedings of the National gathering of those specially engaged in microscopic investigations. The meeting was a highly interesting and profitable one, and our readers may be favored with some additional matter gathered during its progress.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—This important National Organization of Scientists is holding its Annual Session in Minneapolis as we go to press with this number of THE JOURNAL. We expect to favor our readers with some account of its doings in our next number.

BACK NUMBERS.—Inquiries still come whether members who now pay up, or non-members who subscribe, can have the numbers from the beginning. To all such we answer, yes. Complete files can be supplied, and missing or imperfect copies cheerfully replaced.

CORRESPONDENCE.

IS QUININE AN OXYTOCIC?

WEAVERSVILLE, N. C.

There has been, and is yet, a controversy among medical men as to whether quinine has oxytocic properties or not, some contending that it has such beyond doubt, and warning the profession to be cautious in its use in cases of pregnancy, and others equally learned and experienced affirming that it is a mistake that quinine has no such theraputic action. May not both sides be correct, as the idiosyncracies are so very different? I once had a patient that neither quinine or ergot had any effect upon, but the decoction of uva ursi acted quickly and with power. I have a female friend to whom spirits of turpentine is more poisonous than the rhus toxicodendron—even a few drops, in lineament, rubbed on the hand, in a few hours will inflame her arm to the shoulder, producing the same effect as a thorough application of the poison from the poison ash. Now, if the idiosyncracies of persons are so very different, may not quinine act upon some women as an oxytocic, while it would have no such effect on others? My own experience is, that it acts as an oxytocic on about one in ten, while you may give it in large or small doses to the other nine in any state of pregnancy, or even at delivery without any effect in that direction.

From all the facts before me, together with my experience, my conclusion is that we should be cautious in its use, unless we know precisely the effect it has, by direct observation, on the woman to whom we are about to administer it, but if we know that it has no oxytocic effect on our patient, then we may give it with impunity. J. A. REAGAN, A.M., M.D.

ENLARGED TONSILS.

STONE MILLS, N. Y., July 25, 1883.

EDITOR N. S. DAVIS—*Dear Sir:* I notice in THE JOURNAL an item in regard to the treatment of enlarged tonsils which put me in mind of a case which I had treated some time ago. I was called to see a little girl, about 6 years old, who had both tonsils enormously enlarged, so much so that she could hardly breathe, and was becoming pigeon-breasted.

My *modus operandi* was as follows: I took a stick of caustic potash, rolled it in paper, leaving one end bare, placed the bare end on about the middle of the tonsil, held it there about two seconds, withdrew it, waited about a minute, then had her rinse her mouth with vinegar. Repeated treatment twice per week until they were reduced to normal size, being careful to apply in same place each time. I made in all twenty-three applications, treating but one tonsil at a sitting.

I treated her three years ago, and her tonsils have been all right since. GEO. G. SABIN, M.D.

CHOLERA PREVENTION.

NASHVILLE, August 10, 1883.

EDITOR JOURNAL OF AMERICAN MEDICAL ASSOCIATION,

My Dear Doctor: THE JOURNAL of July 28 has an excellent letter on cholera from Dr. H. Raymond Rogers, of Dunkirk, N. Y.; but I beg leave to insist on it that such expressions as the following should be omitted from cholera articles: "We know this disease laughs at cordon sanitaire or quarantine."

Now, it is time the profession had gotten over such free and easy statements. His excellent ideas on the pathology and treatment of cholera are marred by such a statement.

Cholera is, in a broad sense, a contagious and infectious disease, and the world should be taught to admit it, and act accordingly. It is communicable by persons, by traps of all kinds, by water, through the mails, and perhaps through the air for short distances. It is useless to cite authorities to prove this; it is one of those well established facts that no unprejudiced person can doubt, if he will read a part of or all the mass of evidence in any library in the land.

I will not go into details, but I insist that no such

general statements should be used at this time, as public confidence is thereby destroyed in all preventative measures. It may be true that fresh dejections or personal contact will not produce cholera, but this refinement of argument should be entered into if anything at all is said about it.

The fearful difficulties sanitarians meet with are increased tenfold by such statements, made thoughtlessly at the beginning of, or just before, an epidemic invasion. They are treasured up by bigots, and the explanation in extenso not being at hand, they are used with great force by those self-taught and ignorant meddlers we find in every community. Only last evening I was present at a medical society meeting, where a prominent physician started out by saying he did not regard the disease as contagious or infectious, or communicable, in an accurate sense; yet in the course of his remarks he dwelt on the great value of quarantine and prophylaxis, and referred to it as a germ disease, due to a cryptogamic poison, etc. What did the reporters do? Why, of course they seized on the first remark, and heralded it to the world in the morning paper that Dr. So-and-so said cholera was not contagious or infectious, and therefore not communicable, not a word being said in regard to the other remarks.

What I insist on is that the doctors sometimes talk too much with the mouth, and are not particular enough in our applications, and we thus destroy public confidence.

Please tell Dr. Rogers about this, as well as your other correspondents. I believe you are going to have a splendid journal, if you do not let in too much Massachusetts politics, and code and advertisement wrangling. The JOURNAL will be a credit to the profession and to the American Medical Association, but it cannot afford to be partisan or one-sided. Very respectfully, C. C. FITE.

SOCIETY PROCEEDINGS.

REPORT OF THE PROCEEDINGS OF THE AMERICAN SOCIETY OF MICROSCOPISTS.

[Continued from No. 5.]

Thursday morning Dr. A. M. Bleilie, of Columbus, Ohio, read the following paper, entitled "The Effects of the Division of the Vagi on the Muscles of the Heart."

Some of the gentlemen present may remember that at the meeting held last year I presented a paper having for its object the demonstration of nutritive or trophic nerves for the heart. The procedure adopted was as follows: One or both vagi were divided in the neck, and after a certain time the heart was examined. In all cases was found a fatty degeneration of the heart, much sooner when after division of both nerves than if one nerve had been practiced on and better marked the more the time had elapsed between operation and death. These results were all obtained on the rabbit. The Society requested that this investigation be pursued further and a report be made at this meeting. Various causes have since prevented our carrying out the work as thoroughly and systematically as we could have wished. Chief among these was our inability to procure more than a few rabbits. We finally concluded to use pigeons, and even here we had some difficulty in procuring a large stock of animals and a regular supply. The procedure with pigeons was the same as that followed in the rabbit, one or double-sided vagotomy, and where animals did not die from changes superinduced by the operation, death was caused by decapitation or nicotine. A small part of each heart was examined fresh, and the other portion divided into two parts. One was immersed in alcohol, the other in diluted chromic acid. We found that light staining facilitates examination, and of late have almost exclusively used a very diluted eosine solution, the preparation being immersed in this for one or two minutes just before tearing. The granules themselves are not stained by this agent, but the slight tinging of the basis substance was found to be quite a relief in protracted observation. Tearing the pigeon heart is a much more tedious process than with the rabbit heart, nor can such satisfactory preparations be obtained, owing to the extreme delicacy of the fibers in the former. In preparing specimens of the normal heart for a standard, it was soon found that young pigeons were entirely useless for this work, as in them the muscular fibers are all finely granular, the cross-striæ being only indicated by a row of granules. This we verified with many hearts. Pigeons which have undergone double vagotomy die in from ten to thirteen days. Immediately after the operation they are profoundly affected; recover somewhat after a few days, though never fully, and death comes on suddenly without any noticeable signs. At the autopsy the crop is usually found filled with corn and a whitish, fetid fluid, but the direct cause of death is not apparent. In animals which have undergone a one-sided vagotomy only, everything appears to have passed off in a few hours, the pigeon appearing just as one uninjured, nor is there any microscopic change after death.

As a result of our work I would name the following points:

1. The fibers of the pigeon are more delicate and more friable than in the rabbit.

2. In young pigeons the cross-striation of the muscular fibers of the heart is indicated by the fine granules which might be mistaken for beginning degeneration.

3. Even in the adult pigeon granular fibers are occasionally found by the side of well-marked striated ones, the former being perceptibly narrower. Possibly the granular fibers are still embryonic, and destined to replace the older ones as needed.

4. Recently Pohl Rincus has pointed out that the frog's heart has two sets of muscles—the outer one termed the mouth, and the other forming by its arrangment into trabeculæ a system of lacunæ in which the blood circulates. In our pigeon heart preparations blood corpuscles seem to lie in interstices, possibly corresponding to the lacunæ of the frog's heart, and these corpuscles, when altered by reagents, might be mistaken for larger fat granules.

5. After division of one vagus only there follows

in the heart muscle of the pigeon a finely fatty degeneration, about equally marked on both sides of the heart, and more plain the longer the animal has been kept alive after the vagotomy.

6. After double vagotomy the degeneration is better marked—*i. e.*, the fat granules are large and appear sooner than after one-sided vagotomy. Hence we conclude that the vagus in the pigeon, as in the rabbit, carries trophic cardiac fibers, no other explanation accounting for the changes found, and that the influences descending by one nerve are sufficient to somewhat retard the degeneration on both sides which would follow a double division.

Dr. T. S. Updegraff, of Elmira, N. Y., followed with a paper on

HITHERTO UNDESCRIBED ANIMALCULÆ.

The value of this gentleman's observations cannot be considered great, since Prof. Kellicott at once showed that a form described as a new nais is the larva of a well known insect.

Dr. Christopher Johnson, of Baltimore, Md., gave a verbal description of a

NEW POLARIZING CRYSTAL,

which he calls the ethyl ether of gallic acid.

A paper entitled

NOTES ON NEOPLASM,

by Dr. W. A. Birchmore, of Kansas, was read by title, and also another by the same author on

EMBOLISM IN PIGS.

A letter from the Rev. Francis Wolle, of Bethlehem, Pa., announced that his work on the "Desmids of the United States" is nearly completed.

Thursday afternoon, Prof. G. E. Blackman, of Dunkirk, N. Y., read a paper on

THE RELATION OF APERTURE TO AMPLIFICATION IN THE SELECTION OF A SERIES OF MICROSCOPIC OBJECTIVES.

In the selection of a microscopical armamentarium the problem for the ordinary worker is to provide an outfit which shall enable him to see clearly all the details, which, invisible to the unaided eye, are yet visible by the aid of the microscope. To accomplish this amplification alone is not sufficient, resolving power is also required. This depends on angular aperture, but, as the relation is not a simple one, Prof. Abbe, of Jena, has introduced the term numerical aperture which applies to all lenses dry and immersion, and expresses a simple and constant relation to the important property of aperture resolving power. The numerical aperture is easily found by multiplying the refractive index of the medium in which the angle of aperture is measured by the sine of one-half that angle. Now if the numerical aperture of any objective is multiplied by 96,400 we get the average resolving power of that objective.

With these data we can choose a series of objectives and eye-pieces which will answer all purposes. The choice is guided by the practical rule that no more amplification or aperture should be used than is required. The starting point is the fact that lines 100 to the inch can easily be resolved by the unaided eye. It is assumed that the objectives are of the highest grade of workmanship, and the length of the tube from the front surface of the objective to the diaphragm of the eye-piece ten inches. The eye-pieces should be six in number, viz: 2-inch, 1-inch, ¾-inch, ½-inch, ⅓-inch and ¼-inch. The objectives required are the following: One 4-inch of .10 N. A., having an amplifying power of 12½ with a 2-inch eye-piece and a resolving power of 500 lines to the inch; one 1-inch of .26 N. A., having an amplifying power up to 200 with a ½-inch eye-piece, and a resolving power to 20,000; one ⅙-inch, dry working, cover correcting objective of .94 N. A., having an amplifying power to 1,200 with ½-inch eye-piece, and a resolving power to 90,000; one ⅛-inch homogeneous immersion objective of 1.42 N. A., with amplifying power to 1,600 with ½-inch eye-piece, and resolving power to 13,000.

It is evident, therefore, that a ⅙-inch or a ⅛-inch objective will show all that can be seen with a 1-50, while the advantages of the lower power are very great.

In the discussion, Prof. Rogers questioned whether we can compute resolving power, and gave reasons for doubting that this simple formula of Abbe's tells the truth.

After this discussion, there were presented by far the most important papers of the session, namely, the reports on the standard centimeter, one by Prof. Rogers, and the other by Dr. Curtis, Secretary of the National Committee on Micrometry.

Prof. Hilgard, Superintendent of the United States Coast Survey and Director of the Bureau of Weights and Measures, presented to the National Committee the centimeter scale 1882, A, which is carefully ruled on a platinum iridium surface. This scale is divided into ten millimeters, each division being marked by three lines, distant from one another ten mickrons. The first millimeter is again divided in the same manner into tenths of millimeters. The first tenth of a millimeter is subdivided into ten spaces of ten mickrons each. The report of the committee gives the corrections to the different divisions of the scale. None of these are as great as one mickron. Prof. Rogers determined the coefficient of expansion of the platinum-iridium plate, and compared centimeter A with other standards whose corrections had been previously ascertained. Assuming that 2 M. is the limit of precision in microscopic measurement, the observations of Prof. Rogers show that the centimeter A is 1-100 part of the metre des archives at 60° F., and that the second millimeter of the scale is 1-1000 part of the metre des archives at the same temperature.

It thus appearing that this centimeter has every essential of a standard of measurement, the Committee presented it to the Society and recommended that it be adopted as the basis for future studies and discussions in micrometry.

The report of the Committee was adopted by the Society with thanks to Prof. Rogers and to the Committee. The bar was ordered to be placed in charge of the custodian, subject to removal only by the order of the Secretary, countersigned by the President. A committee consisting of Prof. McCalla, Dr. Leste

Curtis and Dr. Geo. Fell, was appointed to take copies of the bar for such societies as may desire them.

The importance of this action of the Society will be appreciated when we consider that it will probably determine the standard of microscopic measurement, not only for this country, but also, for England and the rest of Europe. As is well known, the world has never agreed upon a general standard.

The micrometers of different makers are correct neither in regard to the total length of the unit employed nor in respect to the subdivisions of that unit. Until by very great labor and expense, Prof Rogers obtained accurate copies of the meter and yard, and compared these so carefully with centimeter A, there was not in the world an exact unit of microscopic measurement.

The number of accurate observations on this bar, together with its adoption by the microscopists of the United States, constitute an important argument for its adoption by the world.

In the discussion following this report, Prof. Rogers made the interesting statement that according to his comparison of the yard and meter, the value of the latter is 39.37030 inches, while the generally received value is 39.37079 inches.

Thursday evening the Society held a conversazione at the Calumet Club House. About 300 microscopes were exhibited, and many interesting slides.

Friday morning the following officers were elected for the year 1883–4: President, Hon. J. D. Cox, F.R.M.S., of Cincinnati; Vice Presidents, Prof. T. J. Burrell, of Champaign, Illinois, and Prof. W. A. Rogers, F.R.M.S., of Harvard University; Executive Committee, Prof. A. H. Chester. of Clinton, New York, Dr. H. A. Johnson, of Chicago, and Gen. Wm. Humphrey, of Jackson, Michigan. It was decided to hold the next meeting at Rochester, New York.

Dr. W. T. Belfield exhibited some photographs of crystals of pure and adulterated lard and tallow.

Dr. D. S. Clevenger, of Chicago, gave a short paper on "The Microscope in the Physiology and Pathology of the Brain."

Dr. Thomas Taylor, of Washington, presented a paper on "Internal Parasites in Fowls." He had examined several fowls which had died of an unknown disease, and found a number of parasites, some of them new, in the lungs, the cellular tissue, and the intestinal canal. These studies suggest the conclusion that many of the diseases of the domestic fowl, not referable to any known type, may be due to the presence of parasites.

A paper by Dr. Holbrook, of New York, on the "Termination of the Nerves in the Kidneys," was next read. The nerves were traced by the use of chloride of gold as a staining agent. This substance has the property of staining the nerves dark violet, more intensely than it stains other kinds of matter, while formic acid removes the stain less readily from the nerves.

The fresh kidneys, as well as those preserved in chromic acid solutions, were frozen in a freezing microtone, and the cut sections were placed in a ½-per cent. solution of chloride of gold, where they remained from forty minutes to several days. Then they were washed and left in a 25-per cent. solution of formic acid from a few hours to days. The results obtained are thus given:

The nerves supplying the kidneys are mainly of the non-medullated variety. They accompany the larger arteries of this organ, either in bundles or in flat, expanded layers, and the latter features I found more common than the former.

Sometimes an artery would be found encircled by a network of non-medullated nerves of a bewildering number. Hundreds of such nucleated bundles of fibers could be traced around, above, and below an artery, freely branching, bifurcating, and supplying all the neighboring formations with a large number of delicate fibrillæ. In such a case the single non-medullated nerve fibers lay apart and were separated by an extremely delicate layer of fibrous tissue, the perineurium internum. The corticle substance undoubtedly derives all of its nerves from such bundles accompanying arteries. The pyramidal substance is supplied with bundles of non-medullated nerves, apparently independent of the arteries; at all events such formations are exceedingly scanty here. The bundles of non-medullated nerve fibers are marked by a large number of nuclei. True ganglions I have seen only in small numbers. The bundles of nerve fibers give off delicate ramules to the afferent vessels by which they enter the tuft, and here they produce a delicate plexus spun around its capillaries. It was impossible to decide where the ultimate fibrillæ branch in the capillaries of the tuft, because in the specimens treated with formic acid it was impossible to distinguish between the flat epithelia covering the convolutions of the capillaries and the endothelia covering their interior. Sometimes I obtained a specimen in which it seemed as if the ultimate fibrillæ branched beneath the covering flat epithelia in the delicate connective tissue between the convolutions of the capiliaries, but of this I am not certain. I wish here to corroborate the assertion of L. Bremer, that every capillary is supplied with a plexus of non-medullated nerve fibrillæ, but I disagree with his assertions, that the nerves run outside the wall of the vessel and do not penetrate the wall itself. My own observations, I think, leave little doubt that they penetrate the cement substance between the endothelia. Concerning the distribution of the nerves in the middle coat of the arteries, I fully agree with the assertions of M. Lowitt that they run between the smooth muscle fibers. From the large bundles of non-medullated nerve fibers innumerable delicate beaded fibrillæ arise, and course in the delicate fibrous connective tissue between the uriniferous tubules. In perfect specimens there is no difficulty in satisfying one's self of the fact that every tubule is encircled by a plexus of non-medullated nerve fibers coursing either in the immediate vicinity of the tubule, in the interstitial connective tissue, or within the dense layer subjacent to the epithelia, known as *membrana propria*, or even within the layer, along the feet of the epithelia themselves. Obviously those nerves are most favorable for research which course outside of the epithelia, at a

small distance from the membrana propria. Here we can, sometimes, see at certain regular intervals, arising at right or acute angles, extremely delicate nerve fibrillæ, which pierce the membrana propria and run into the cement substance between the epithelia. The distance in which these ultimate fibrillæ arise fully correspond to the breadth of a single epithelial element, so much so that in some places the impression of the ladder with regular rounds is obtained. Of course, only one of the frames or side pieces of the ladder is seen. In a front view of the epithelia the nerve-fibrillæ can sometimes be traced in the form of a delicate plexus distributed in the epithelia, and not infrequently conveying the impression that every epithelium is surrounded by a nerve-fibril in the cement substance. In an edge view this impression is not obtained, for we can see the interstices between the epithelia supplied with nerves only exceptionally, while in the majority of cases two or three epithelia seem to be supplied with only one nerve fibril common to them. The latter image is more particularly pronounced along the straight collecting tubules in which, usually in edge view, two nerve fibrillæ are situated between three or four epithelial elements, and here the cement substance, carrying the nerve fibrillæ, as much broader than the cement substance apparently destitute of nerve fibers. If, however, we recall the fact that in a front view of the tubules the arrangement of the ultimate fibrillæ is plexiform, we obviously should not expect to see in edge view nerve-fibrillæ between each single epithelium. The distributions of the nerves in the uriniferous tubules seem to be richer in the convoluted and the ascending and descending limbs of the narrow tubules, while the straight collecting ones seem to be more scantily supplied. Several times I have seen nerve fibers accompanying the loops of the narrow tubules in a direction corresponding to their course. Recent researches made by S. Stricker make it evident that the cement substance between the epithelia is by no means an invariable formation, and that temporarily the ledges of the cement substance may be distinctly seen; at other times, on the contrary, be lacking to such an extent that the epithelia represent one unbroken layer of protoplasm with nuclei at regular intervals. Even when the cement substance is apparent, invariably transverse spokes (the formerly so-called thorns) are seen traversing the layers of cement substance interconnecting the single epithelia. It is these spokes with which the nerve-fibrillæ inosculate. Thus we easily understand the way in which nervous impulse is transmitted into the interior of the small secretory work-shops, termed epithelia. Dr. Beale claims to have traced the nerves of the kidney to their distribution around the vessels and uriniferous tubules, but makes no mention of their final endings. The low power used by him leads me to think that he may have mistaken connecting tissue-fibers for nerves. I have searched the records of microscopic research carefully since 1870, and find no special mention of discoveries in the terminations of the nerves in any glandular organ.

The last paper of the morning session was by Dr. Hudson, on Torula.

Friday afternoon Prof. Eastman, of Baltimore, gave a verbal description of the Eggs of the Tricocephalus Affinis in the Liver of the Rabbit.

Prof. Killicott presented two interesting papers, one on Cathurnia data, and another on Parasites of the Cray-fish.

Prof. Mansfield, of Greencastle, Ind., read a paper on Division of Labor among Microscopists.

A paper by Dr. Lester Curtis on Observations on Undescribed Vessels of the Spinal Cord of the Cat gave the results of a new method of staining.

After the reading of the papers the President elect was conducted to the chair, when he made a brief speech and then declared the meeting adjourned.

REPORT OF THE SECRETARY OF THE SECTION ON SURGERY AND ANATOMY OF THE AMERICAN MEDICAL ASSOCIATION, AT THE MEETING IN CLEVELAND, JUNE, 1883.

CASE HALL, June 5, 1883.

SECTION ON SURGERY AND ANATOMY.—Meeting called together at 2:30 P. M., by the Chairman, W. F. Peck, M.D.

Dr. A. F. Holt's being the first paper on the programme he was called upon to read the same, but asked that his paper be postponed until late in the afternoon, as he wished to display illustrations by the magic lantern. Granted.

Dr. R. A. Vance was called upon and read a paper on Radical Cure of Hernia, by a new method. A motion was made that the paper be referred to a committee appointed by the Chairman.

Dr. D. P. Allen read a paper next on "Comparison of Antiseptic and non Antiseptic Method of Treatment." Discussions upon this subject were made by Drs. Murdock, Penn; Martin, Mass.; Hankin, Penn; Quimsby, New Jersey; McClurg, Penn; Dr. Gazalon, Maine, and Watson, New Jersey. A motion to lay this discussion upon the table was made by Dr. Murphy and carried.

By special request Dr. S. D. Gross, of Philadelphia, then read a paper upon the "Value of Early and Late Operation in Morbid Growth, Especially Malignant." A resolution was made by Dr. Gazalon to request Dr. Gross to present his paper for publication, but the doctor declined upon the condition, that the paper was the property of the Surgical Association.

Dr. H. A. Martin followed with a paper on "Treatment of Synovial Disease by a New Method." The rubber bandage was then displayed as his new method of treatment. A motion to refer Dr. Martin's paper to a committee for publication, carried.

Dr. Murphy made a motion that the Section should appoint a special time for the purpose of Dr. J. R. Taylor of New York, and the motion being carried, the Chairman appointed 2 P. M., on June 6th, as the special time, half an hour before the regular session.

A motion to adjourn being in order, it was moved and carried.

SECOND DAY, JUNE 5, 1883.

SECTION ON SURGERY AND ANATOMY, Case Hall.—Meeting called to order by the Chairman, W. F. Peck, at 2 P. M. Regular meeting would have taken

place at 2:30 P. M. Extra session of half hour for the benefit of Dr. Taylor, to read a paper on "Fractures of the Long Bones." Dr. Taylor not being present, Dr. Robert Newman, of New York, was called upon and read a paper on the "Surgical Use of Electrolysis." Especial attention was given to its practicability in the treatment of stricture of the urethra.

Dr. W. F. Peck, Chairman, appointed a committee consisting of Dr. McMurty, of Kentucky; Dr. Moore, of New York, and Dr. Park, of Illinois, to meet with the Secretary for examination of papers.

Dr. J. R. Taylor, of New York, read a paper, by request, on "Fracture of the Long Bones." The doctor displayed his apparatus for fracture of the femur.

Dr. Donald Mc Maclean, of Michigan, not being present, and being first upon the list for Wednesday evening, Dr. Marcy was called upon and read a paper on the "Comparative Value of Antsieptics." A motion to receive and refer the paper to the committee for publication, carried.

Dr. Lewis Hall Sayre, New York, followed with a paper on "Amputation Below the Knee-Joint in Preference to Bresement Force or Resection in Certain Cases of Deformity with Anchylosis;" illustrated by two cases. Motion to receive and refer to committee, carried.

As Dr. J. H. Packard, of Pennsylvania, was not present at the Association, and having sent his paper on "Report of a Case of Re-Amputation at the Hip-Joint; Secondary Hæmorrhage on Sixth Day; Ligature of the Primitiva Iliac Artery," a motion to refer paper to committee, carried.

Dr. E. M. Moore, of New York, read a paper giving the details of a case in which 1¼ inches of the shaft of the ulna were resected. To overcome deformity resulting from fracture of the radius, the ends of the bone were wired together, securing perfect union without deformity.

Dr. Wile, of Courtlandt, N. Y., corroborated and sustained the conclusions of Dr. Moore's paper. Re-fracture of the bone when badly united is proper.

Dr. S. M. Ross, of Altoona, Pa., related a case of fracture of lower end of radius, where the ulna could not be retained in position.

Dr. H. O. Marcy, of Massachusetts, related a case of luxation of ulna seven weeks after fracture of radius, reduced after Dr. Moore's method.

Dr. Quimby, of J. C., asked what was the extent of time at which re-fracture was permissible. Dr. Moore stated that after six months if he did not get good results.

Dr. Kinloch, of South Carolina, asked if the same result could not be attained by resecting the ulna above the articulation.

Dr. V. H. Coffman, of Nebraska, read a paper on the "Treatment of Tender Spines by Incision," which was discussed by Drs. Moore, Quimby, Campbell, Watson, and Steele of Illinois. The discussion was closed by the author.

CASE HALL, June 7, 1883.

First, by request, Dr. Alfred F. Holt, of Massachusetts, showed at the Opera House some illustrations of anatomical and pathological specimens.

Section was called to order by Chairman W. F. Peck.

Dr. W. A. Byrd read a paper on "Excision of Both Hip Joints." Dr. Verety, of Chicago, exhibited splint and apparatus which were used by Dr. Byrd, after excision. Motion to refer paper to committee for publication, carried. Remarks were made by Drs. Sayre, of New York, Garcelon, of Maine, and Gunn, of Chicago.

A paper on "Surgical Treatment of Intestinal Obstruction" was then read by Dr. Henry O. Marcy. Motion to refer to committee for publication. The paper was discussed by Drs. Watson, of New Jersey, Gordon, of Maine, and Byrd, of Illinois.

Dr. Gordon said he believed that carbolic acid would be excluded from antiseptic use; which was discussed by Dr. Murdock, of Pennsylvania; Dr. Keller, of Arkansas, and Dr. Moore, of New York.

Dr. Prewett, of Missouri, read a paper on "A New Operation for Case of Ranula." Referred to Committee.

Dr. Jos. Raurohoff, of Ohio, next read a paper on "Early Use of Trephine." Referred. Discussed by Drs. Gunn, of Illinois, and Hyde, of New York.

Dr. R. B. Bentley, of New York, followed with a paper on "The Treatment of Cystitis by External Urethral Section." Discussed by Dr. Murdock, of Pennsylvania, and referred to Committee of Publication.

Dr. R. B. Bontecou, of New York, reported on "Treatment of Cystitis by External Urethral Section." Moved and carried that the Doctor be requested to prepare a paper on the subject, to be published in THE JOURNAL.

Dr. Joseph H. Warren, of Massachusetts, read a paper on "Tissue Repair, or Pathology of Subcutaneous Injection in the Cure of Hernia." Discussed by Dr. Hally, of Missouri; Dr. Philips, of Ohio; Dr. Reynolds, of Michigan; Dr. Thorn, of Ohio, and referred for publication.

Dr. Verity, to write a paper on "Derrick and Improved Apparatus for Suspension in Application of Plaster Casts, etc.;" also on a "Universal Suspension Splint.

The following dispatch was received from Prof. W. W. Dawson, of Cincinnati:

"PROF. W. F. PECK, *Chairman Section on Surgery American Medical Association*, Cleveland, Ohio:—Sorry that I cannot meet with the Surgical Section. Convey my kindest wishes to the Fellows, and my earnest wish that our department may this year be well sustained. W. W. DAWSON."

Received, and the following ordered by the Section to be telegraphed in reply:

"PROF. W. W. DAWSON, Cincinnati, Ohio: The Section sends Prof. Dawson its sincere regret for not having had his presence and counsel."

Adjourned *sine die*.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the College of Physicians. Third Series; Vol. VI.

Development of Cancer from Non-Malignant Diseases. By Daniel Lewis, M.D.

The Opium Habit: Its Successful Treatment by Avina Sativa. By E. H. M. Sell, A.M., M.D.

Usual exchanges.

MEDICAL SOCIETY ITEMS.

NORTHWESTERN INTER-STATE MEDICAL SOCIETY.

About one year since a society was formed in Hudson, Wisconsin, by a good delegation of physicians and surgeons from both Minnesota and Wisconsin. The soiety was christened "The Northwestern Inter-State Medical Society," and embraced twelve counties lying on either side of the State line from Lake Pepin to Lake Superior.

It meets every four months somewhere in the district, but its regular annual meeting is always in Hudson, on the first Tuesday in August. It starts out on its second year with its membership greatly augmented, and bids fair to be the source of both pleasure and instruction to its members.

The next meeting will be held in Eau Clare on the first Tuesday in December. The society is thoroughly orthodox, and cordially invites membership.

NECROLOGICAL.

Burnham, Walter, M.D., was born at Brookfield, Vt., Jan. 15, 1828, and was the son of Dr. Walter Burnham, a distinguished physician of that town, died at his residence in Lowell, Mass., Jan. 16, 1883, of gastritis.

When returning from a professional visit to New York, in Jan., 1880, he received so severe an injury of the left elbow, by a fall at Elmira, as to necessitate an amputation of the arm in the following year.

From this time his health gradually failed, though his mental faculties seemed but little impaired even to the time of his death, at the age of 75.

Dr. Burnham graduated from the University of Vermont in 1829, and commenced the practice of his profession in Guildhall, Vt. Thence he removed to Barre, aud in 1846 came to Lowell, where he soon became engaged in a large practice, mainly surgical.

By the citizens of Lowell he was often called upon to fill public positions of trust and responsibility. Among them were two terms of service as a representative to the General Court of the State. While a member of the Legislature he presented to that body a bill known as "The Anatomy Act," which provided for the use of certain material by the medical schools of the State, and by physicians, for the purposes of dissection.

Mainly through his efforts this bill was passed, and with few, if any, modifications, is now a statute law of Massachusetts.

He thus rendered to the advancement of medical science a great and lasting service.

Although he enjoyed a wide reputation as a general surgeon of great ability, yet he was known to the profession at large especially as an ovariotomist. He made his first ovarian operation in 1851, at a time when the almost universal sentiment of the medical world was opposed to ovariotomy, and when Atlee, of Pennsylvania, was perhaps the only American who advised and performed the operation.

His first case was successful, and others followed in rapid succession, until in 1881 his whole number of cases was about two hundred and fifty, of which more than seventy-five per cent. had recovered.

In New England, at least, the change of sentiment regarding ovariotomy was largely due to the work and teaching of Dr. Burnham.

To him is due, also, the credit of having been the first to successfully remove the uterus and its appendages by abdominal section. This operation was performed in June, 1853.

While great respect and honor was accorded to Dr. Burnham by his professional confreres as one of the pioneers in the advancement of abdominal surgery, still, from his patients and others with whom he came in contact, he was the recipient of a measure of good will and affection larger than is often accorded to members even of our profession.

To young practitioners just entering upon the struggles of their professional life, Dr. Burnham always extended a helping hand. In all their difficulties and discouragements an appeal to him was answered with reassuring words and generous acts.

Whenever he had occasion to give them instruction or correct their errors he did it with wonderful gentleness and patience.

To-day many surgeons in successful practice remember with deep gratitude their indebtedness to Dr. Burnham. John C. Irish, M.D.

Mason, Augustus, M.D., died at his residence, in Brighton, May 24. He was born in Waltham, Mass., Oct. 21, 1822, was graduated from Brown University in the class of 1841, studied medicine at Harvard University, taking his degree in 1844. He continued his medical studies in Paris until 1847, when he commenced the practice of his profession in Lowell, and removed to Brighton about 1855. He was eminently successful in his calling, holding for many years a leading position as a practitioner in this large suburban town. He was commissioned as Assistant Surgeon of the 43d Reg. Mass. Vol., and was stationed in Newbern, N. C., where he served until the spring of 1863, when, owing to the illness of Mrs. Mason, he resigned his commission and returned home. In 1873, he relinquished his practice and went to Santa Barbara, Cal., for the benefit of his invalid wife. Here he remained till 1877, when he returned to Brighton and resumed his work. He was a member of the American Medical Association, and of several of the local societies. He was a delegate to the International Medical Congress, held in

London last year. He frequently contributed to the literature of his profession, and is best known for his studies upon the climatology of Southern California.

He was esteemed and beloved in Brighton, not only for his ability, but as a public-spirited citizen, prompt in furthering every local interest, and he was exceeded by few in the real service rendered his town. He was active in the redemption of Brighton from the long continued detriment sustained on account of the many private slaughteries, and in the establishment of the abattoir, which at once added materially to the intrinsic value of property. Thus was removed an important cause of the ever widening contamination of air, water and soil. He held large properties, which he had done much to develop, and, at the time of his death, was actively engaged in plans for furnishing better metropolitan steam railroad facilities. He had been but a few days sick, and his death was sudden and unexpected.

H. O. MARCY, M.D., of Mass.

MORRISON, JAMES, A.M., M.D., was born in Peterborough, N. H., June 20, 1818, and died in Quincy, Mass., May 20, 1882. He graduated at Harvard University, in 1844, and studied medicine at the University of Maryland, from which he received his medical degree in 1846. For a number of years he was the resident physician at the Baltimore Infirmary. About 1850 he moved to San Francisco, Cal. He assisted in the organization of the first medical school on the Pacific, and was Professor of Theory and Practice and Pathological Anatomy. He taught for about five years. For two years he was a student of medicine in Europe, devoting most of his time to study in Paris. He was a trustee of the University of the Pacific. His practice was large, and he was an active worker in the advancement of the standard of medicine in California, and at one time the Vice-President of the State Society. Ill-health and his love for New England caused his return to Massachusetts. For the last twelve years he had been able to continue the practice of his profession, and had contributed occasional articles to various medical journals. At the time of his death he was President of the Norfolk District Medical Society.

H. O. MARCY, M.D., of Mass.

ASHFORD, FRANCIS ASBURY, M.D., of Washington, D. C., was born in Fairfax county, Va., September 18, 1841; died at his residence, in Washington City, May 19, 1882. He was educated at the Academy in Alexandria, Va. The breaking out of the war between the States interrupted his academic course, as he joined the Southern army and served to the close of the war. His medical studies were begun immediately after the armies were disbanded, and pursued under the supervision of Dr. Thomas Miller, of Washington, between whom and his pupil there was established a firm and lasting friendship, which lasted through the life of each. Attending lectures at the medical department of Columbia College, from which he graduated M.D. in 1867, he was for one year resident student in Columbia Hospital, and four years Assistant Physician under Dr. J. Harry Thompson. He subsequently became Assistant, and, after his own practice became large, he gave up that position for Consulting Surgeon, and was a member of the Board of Directors, which position he retained to the time of his death. He was physician in charge of diseases of women in Columbia Hospital Dispensary. In 1876 he was elected Professor of Surgery in the Medical Department of the University of Georgetown College, and also Dean of the Faculty, a position which he filled with ability and great acceptableness to the Faculty and to the students. He was one of the originators and founders of the Children's Hospital, which has grown to be one of the very best institutions of its kind in the country. He has served creditably as Surgeon to the Hospital, and has endeared himself to all connected with this charity. For two years he has been connected with the Faculty of the Training School for Nurses, where he exhibited his usual ability. Dr. Ashford early connected himself with the medical organizations, and was one of the originators of the Clinical Pathological Society, which for a few years was a very active and profitable association to its members. In the Medical Association, the chartered organization, he has been a very active and useful member, and was its President last year. He was also a member of the Medical Association of the district and of the Gynæcological Society of Washington. Dr. Ashford has contributed some exceedingly useful papers to the medical journals. For the last six or eight years his practice has been large and laborious, and doubtless had something to do with his failing health. The medical organizations with which he was connected met in special sessions, and passed resolutions of respect for his memory and of condolence with his family. He leaves a wife and five children.

BACHE, BENJAMIN FRANKLIN, Medical Director, U. S. N., was born at Monticello, Va., February 7, 1801; died November 2, 1881. He was a great grandson of Benjamin Franklin. Graduated from the College of New Jersey, at Princeton, in 1819, and from the Medical Department of the University of Pennsylvania in 1823. He was for several years, while on furlough from the Navy Department, Professor of the Natural Sciences at Kenyon College, Ohio.

Dr. Bache was a man of profound learning in his profession, and of great and varied general information. He was an omniverous reader, and had the advantage of a remarkably retentive memory. He established the Naval Laboratory on the principle of of a guarantee of purity of medicinal preparations to be used in the naval service, and carried on its work for many years. As an expert in crude drugs he had acquired a remarkable degree of skill.

Dr. Bache was the first (within the knowledge of the writer) to apply the principle of disenfection by means of heat, to a ship, having early in his career been successful in ridding a ship in which he was serving, of a severe epidemic ot yellow fever by that means.

E. S. B.

Forwarded by J. N. Gunnell, U. S. N.